PACKAGE engineering

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National Packaging Conference
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and review of "firsts" at
the National Packaging Exposition
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New sources of line mechanics

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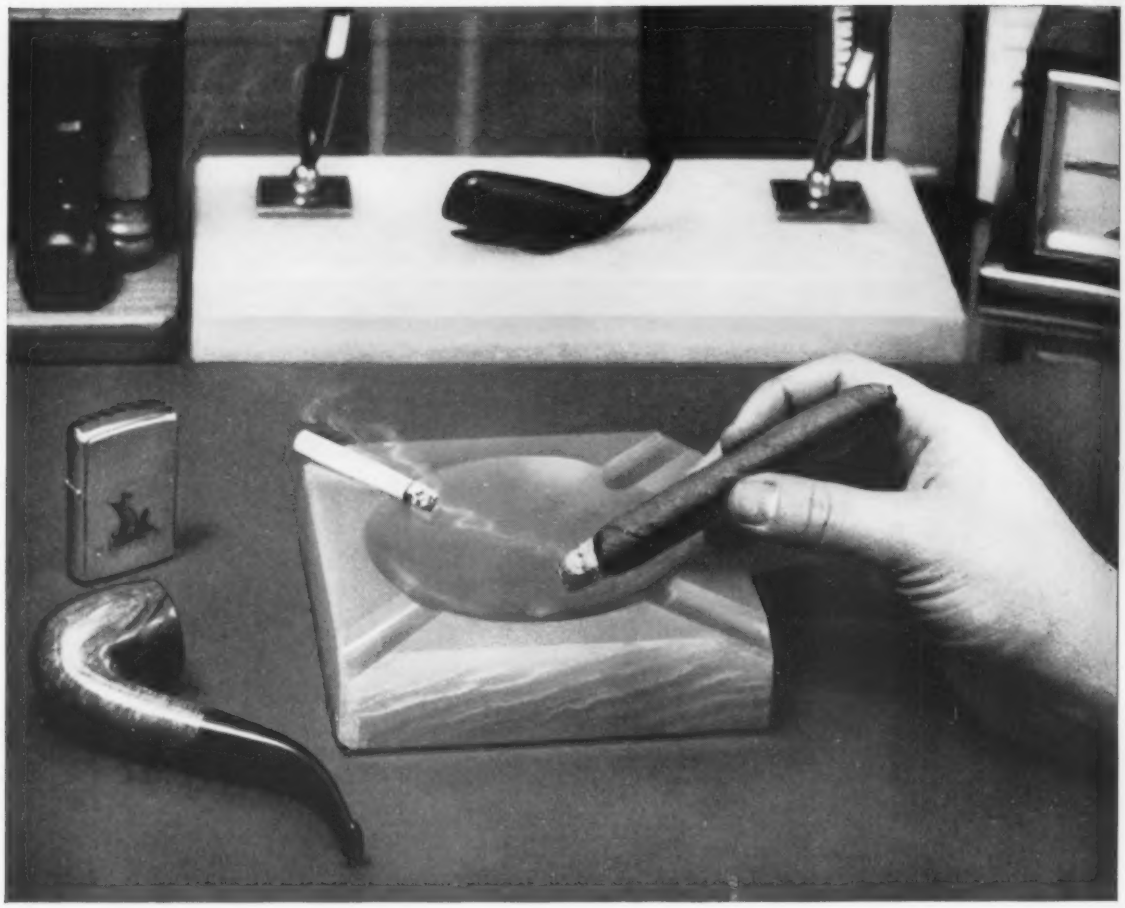
APRIL 1961
VOLUME 6 • NUMBER 4

Serving the tobacco industry world-wide



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PACKAGE engineering

APRIL 1961 • VOLUME 6 • NUMBER 4 • AN ANGUS J. RAY PUBLICATION

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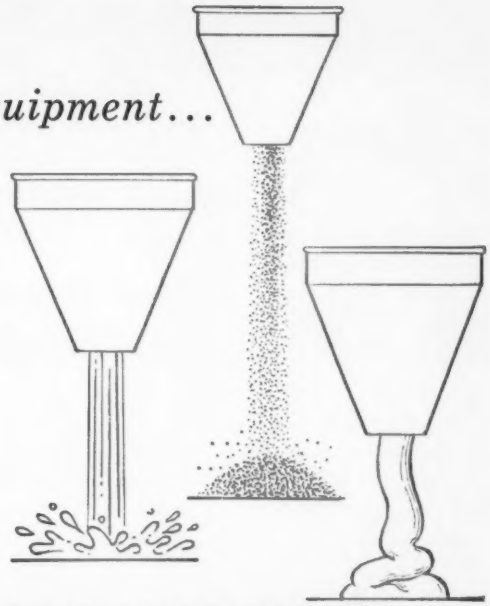
Our December, 1961 issue will carry a cumulative editorial index for the year, listing our feature articles by subject and author.

Package Engineering is indexed in Engineering Index

In filling and packaging equipment...



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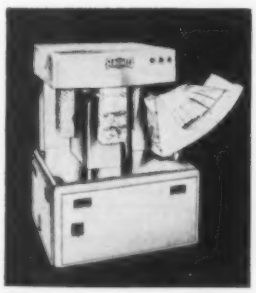
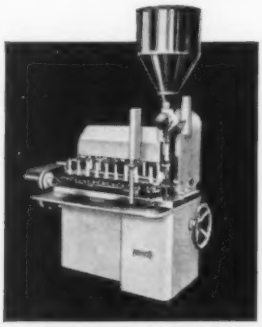
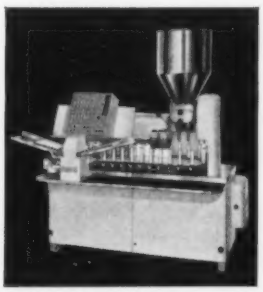
That's Swedish craftsmanship plus prompt U.S. service! And that's what you get in each and every Arenco machine. Performance that is second to none, backed by the service only fully stocked warehouses and skilled specialists can provide. For complete details, write Arenco: one of the most dependable names in filling, packaging, proportioning, closing, sealing and check-weighing equipment.



VUF automatically feeds and opens as many as 2100 bags an hour, can serve three combination weighers or portioning machines at one time. Synchronized controls maintain best filling speed, eliminating no-fills or double portioning of hard-to-handle materials. Opens each bag before filling. Handles sizes from 2½"-6¼" wide to 8⅝"-15⅛" high. Quick changeover for biscuits, breakfastcerealsorgranularproducts.



GAB automatic tube filling and closing machine packages liquids, semi-liquids and stiff pastes at speeds as high as 3000 an hour. Complete filling, with no air bubbles or pockets. "No-tube, no-fill" efficiency. Takes tubes up to 1½" in dia., 7¼" in length, 1¾"x 8" on special order. Tube-cleaning, cap-tightening, blow-off and coding device standard equipment.



GAN, "big brother" of the GAB, fills and closes up to 7000 units an hour with one operator. Automatic tube feed, photo electric tube register and dual filling nozzles. Tube discharge can be tailored to virtually any cartonning set-up. Handles tube diameters up to 1½", lengths to 7¼". Like GAB, fast changeover from size to size, product to product.

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A note from the Publisher

April is packaging show month in Chicago

This issue of PACKAGE ENGINEERING that you are reading on the eve of the National Packaging Exposition is the largest we have ever published. It is a new high in both editorial pages and advertising pages.

The steady growth of PACKAGE ENGINEERING is an indication of the constantly growing importance of packaging in the nation's economy and of the tremendous importance of the engineering-research-production group we serve.

Some reflection of the tremendous vitality of the packaging field is the fact that, while a great deal is being written about the poor state of the nation's business, the packaging field continues to expand. During the past few months, I've talked to dozens of suppliers and package users from coast to coast and been in many of their plants; there is little indication of poor business generally in the packaging field.

Nowhere will the tremendous scope of the packaging field be more clearly shown than at the packaging show being held at McCormick Place in Chicago this month. This issue of PACKAGE ENGINEERING previews the packaging show in both its editorial content and advertising.

Many trade shows have floundered over the past ten years as crowds have dropped and interest lagged, but the packaging show keeps on growing and attracting larger audiences because it is a show loaded with exhibits that will help you make more money through the better use of packaging.

On Page 106 is a list of those exhibitors who have indicated they are showing something new or for the first time, together with a brief description of what they will be showing. After noting the companies that are of particular interest to you, turn to the center spread and check the booths you want to see in the complete alphabetical listing there.

In addition to booth numbers, this four-page center spread has hotel headquarters of the exhibitors. This is a handy section on which to check off the things you want to see in particular and then take to the show with you. You will find the list of hotel headquarters of great help in locating people you may miss at the show. With this information, plus the show directory that you will receive at the door, you can be sure of seeing the things you want to see.

Many exhibitors are carrying ads in this issue, and you can find additional information about them by looking up their ads through our advertising index.

One last thought—you can save some time by having your secretary fill out a rapid registration card before you leave your office. You'll find two of them inside the cover of this issue.

Angus J. Ray

Publisher

PACKAGE engineering®

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For your calendar

April 4-6. Research and Development Associates 15th Annual Meeting:
Hotel John Marshall, Richmond, Va. Contact: Col. R. A. Isker, secretary, Research and Development Associates, Food and Container Institute, Inc., 1819 W. Pershing Rd., Chicago 9, Ill. *Telephone: LAfayette 3-5500.*

April 10-12. ASTM Committee D-10 on Packaging (spring meeting):
Shoreland Hotel, Chicago, Ill. Contact: R. F. Uncles, committee secretary, American Cyanamid Co., 30 Rockefeller Plaza, New York 20, N.Y. *Telephone: CIrcle 7-0100.*

April 10-13. AMA 30th National Packaging Exposition and Conference:
McCormick Place (new Lakefront Exposition Center), Chicago, Ill. Contact: John L. Wood, packaging coordinator, American Management Association, 1515 Broadway, New York 36, N.Y. *Telephone: JUdson 6-8100.*

May 7-11. Institute of Food Technologists 21st Annual Meeting:
Hotel Statler Hilton, New York, N.Y. Contact: Col. C. S. Lawrence, executive secretary, Institute of Food Technologists, 176 W. Adams, Chicago, Ill. *Telephone: ANdover 3-5492.*

May 15-16. American Institute of Electrical Engineers 1st Annual Packaging Industry Techincal Conference:
The New Ocean House, Swampscott, Mass. Contact: Wallace Warren, registration chairman, R. J. Reynolds Tobacco Co., N. Main, Winston-Salem, N.C. *Telephone: PArk 5-7222.*

October 1-4. Produce Packaging Association 11th Annual Convention and Exposition:
Chase-Park Plaza Hotel, St. Louis, Mo. Contact: Robert L. Carey, executive secretary, Produce Packaging Association, P.O. Box 29, Newark, Del. *Telephone: ENdicott 8-2906.*

October 18-20. Packaging Institute 23rd Annual National Packing Forum:
Biltmore Hotel, New York, N.Y. Contact: Charles A. Feld, executive director, Packaging Institute, 342 Madison Ave., New York 17, N.Y. *Telephone: MUrray Hill 7-8875.*

November 7-10. Packaging Machinery Manufacturers Institute Show of 1961:
Cobo Hall, Detroit, Mich. Contact: W. L. Redding, Hanson & Shea, Inc., One Gateway Center, Pittsburgh 22, Pa. *Telephone: ATlantic 1-8552.* *(End)*

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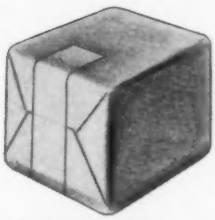
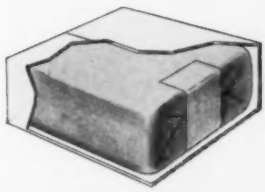
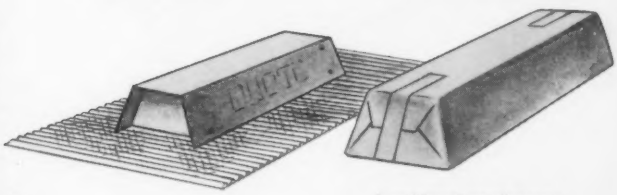


A cushioned carton



A cushioned inner wrap



A cushioned exterior wrap

Tough, resilient Sherman Corroflex gives you the cushioning-protection-in-transit that used to require combinations of padding, double-face inserts, cartons, and kraft wrapping. Now you can pack, wrap, and ship with positive protection against jolts and abrasion — *using Corroflex alone!*

With a roll of Corroflex in your shipping room, you'll say good-bye to unwieldy inventories of many-sized cartons — the mess and clutter of excelsior, tissue, and other padding materials. The convenient roll lets you tear or cut just the size you need, when you need it. Extra-pliable Corroflex wraps snugly around any shape — makes its own "carton," forms its own shipping wrapper. You save shipping cube where inches count — save shipping weight where ounces count!

The secret of Corroflex's cushioning-protection-without-weight lies in rugged, resilient corrugations bonded to a tough, puncture-resistant backing sheet. With Sherman's exclusive diagonal scoring, Corroflex folds easily in any direction — wraps and tucks as quickly as paper. And Corroflex can be taped, tied, strapped, or stapled to form a product-hugging package that stands up under roughest abuse in transit.

Ask your nearby Sherman distributor to show you how Corroflex can cut your packaging costs — reduce packaging material inventory. Corroflex comes in a variety of weights, grades, and widths for every need. For samples of Sherman Corroflex, write Dept. P

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DIVISION OF St. Regis PAPER COMPANY

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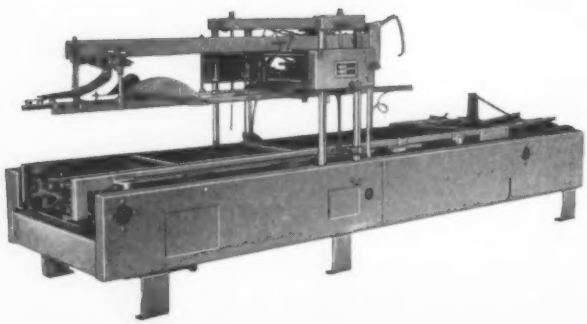
THE GLU-LINER IS ALWAYS READY TO GO. JUST PUSH A BUTTON.



NO GLUE POTS to clean and fill; no rollers to scrape. Glue is stored in a reservoir. Floors stay cleaner. Make-ready and set-up time is reduced; production hours boosted. No shear pins — overload protection is electrical. Push a button and you restart in time. For case gluing as modern as your package, write for the details on the Glu-Liner to Emhart Manufacturing Company, Portland Division, Portland, Connecticut.

EMHART

ANOTHER REASON
FOR CHOOSING
OWENS-ILLINOIS
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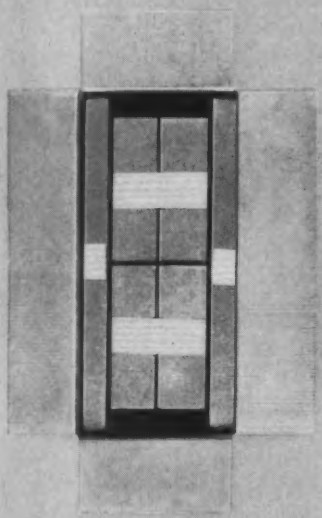

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Flint, Mich.	Minneapolis, Minn.
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Kansas City, Mo.	Oakland, Calif.*
	Salisbury, N. C.

*These plants operated by National Container Corporation of California, subsidiary of Owens-Illinois.

How Owens-Illinois corrugated boxes protect "Project Mercury" voice carrier

Communication with the first U.S. astronaut in space will be made through an electronic voice carrier which will also keep track of his pulse and breathing. This device is so *ultra*delicate that the on-the-ground transporting of it posed a problem that was "out of this world."

Owens-Illinois designed the corrugated shipper above for the Project Mercury device and solved the problem. If you're looking for a safer, better way to protect and ship your product, no matter how fragile or delicate, get in touch with Owens-Illinois.

PAPER PRODUCTS DIVISION
FORMERLY NATIONAL CONTAINER

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

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The PULSE of packaging

Packaging across the seas:

India's NATIONAL PRODUCTIVITY COUNCIL recently established a productivity team for the packaging industry, gave it 13 problems to study—ranging from materials and specifications to the training of packaging personnel. Indian packagers hope to offer locally-made alternatives to offset the lack of imports of packaged consumer goods.

Extreme climatic variations within the country and India's current need to hold cost down with moderately or cheaply priced packages add to the difficulties of packaging in an economy where barter and mass distribution, and bullock carts and tractors exist side by side. Users and suppliers of packaging think that increased standardization will be a big feature of packaging's growth under India's third five-year plan.

Those attending the biennial meeting and congress of the EUROPEAN PACKAGING FEDERATION, *April 26-29 at Vienna, will hear lecturers from Austria and abroad discuss such problems as packaging research and design in packaging. Theme of the congress: packaging as an element in the economic outlook. More information available from Austrian Packaging Centre, Vienna 1, Hoher Market 3—telephone 63 57 63.*

Packaging perks up in the West Indies: CROWNCORK (Jamaica) LTD. is building a plant at Kingston to serve Jamaica's carbonated beverage industry which up to now has imported its crowns. Also, Crowncork will export crowns to other islands in the West Indies Federation. WEST INDIES GLASS CO. LTD. is building a glass container factory using equipment of American design. It will produce 30 tons of melted glass every day, operating 24 hours a day, 7 days a week.

Rap-In-Wax Co. has formed RAP-IN-WAX A.G. (A.G. is the German equivalent of Inc.) at Zug, Switzerland. The new company has acquired "a substantial interest" in RATIONELLE VERPACKUNG with a 50-000-sq.-ft. plant near Zurich.

WRIGHT MACHINERY CO. LTD. *now has a subsidiary in London. It will make and sell packaging and processing equipment for food and other industries in the United Kingdom and is taking over the operations of* INDUSTRIAL PRODUCTS (SPECO) LTD.

INTERNATIONAL PAPER CO. is taking over the Grace paper enterprises of W. R. GRACE & CO. in Puerto Rico and Mexico and will participate with Grace in an operation in Colombia, where a pulp and paper mill at Cali is now nearing completion.

Trends to watch:

Safer packaging for acid: J. T. BAKER CHEMICAL CO.'s new 1-lb. polyethylene bottle has a calibrated closure that lets you "dial" the rate of flow from single drops to a steady, controlled stream. Other features of this package include a finger-grip dust cover, primary and secondary sealing rings, and a dripless pouring lip.

Proponents of heat-sealed polyester film pouches for missile or other space component items say that progress for clearance is "hopeful" as military and civilian laboratory tests are underway. Feature of package: a piece of plastic foam makes it a two-compartment package, keeps desiccant away from part, but lets desiccant absorb moisture through foam.

Use of plastics for blow-molded bottles may double during 1961, according to William O. Bracken, HERCULES POWDER CO. He predicted household starching and bleaching liquids will soon appear in plastic bottles.

Greater demand for convenience foods and increasing mechanization in bakeries indicate that the baking industry will use aluminum foil plates and pans at a rate of 1.5 billion units annually by 1965, for fresh and frozen items, notes Fred V. Robinson, KAISER ALUMINUM AND CHEMICAL SALES, INC. Sales of convenience products jumped 39 per cent in 1960 while grocery store sales rose just 4 per cent, according to Mr. Robinson.

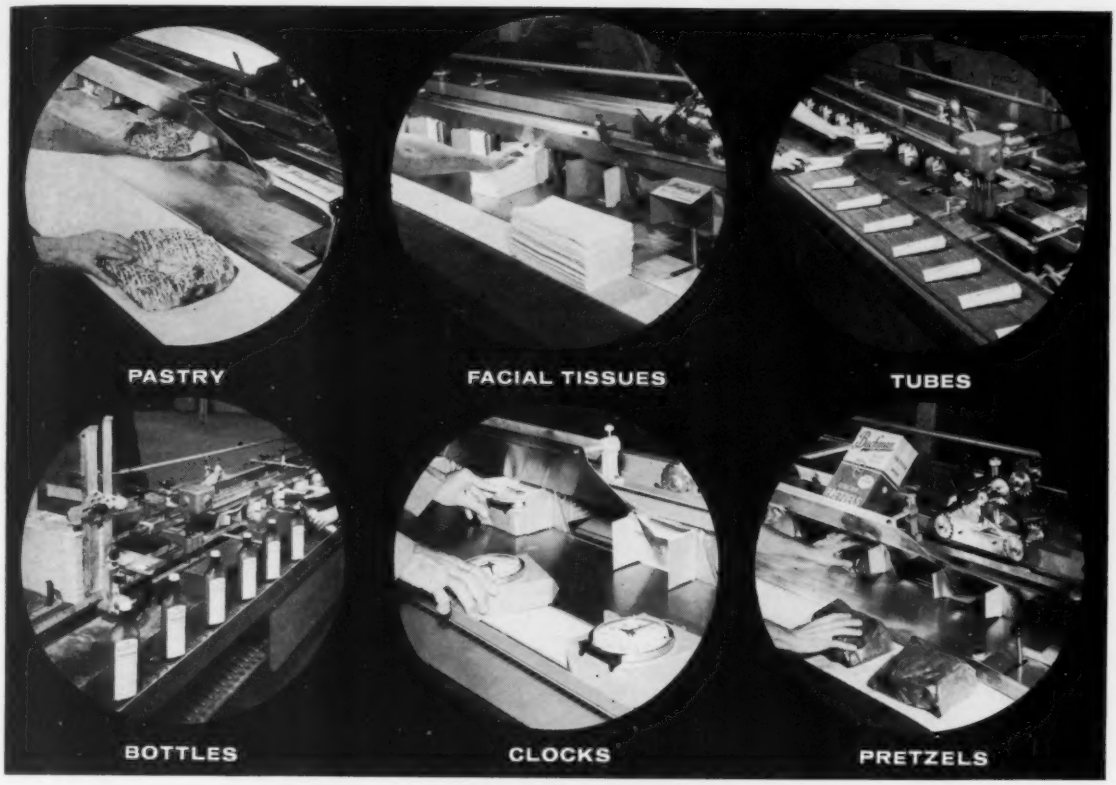
Pleased by 1960's record level of cellophane sales, THE DU PONT CO. *thinks that developments (during coming months) will create new markets and expand existing ones for cellophane. It said increasing acceptance of polymer-coated types and growing usage of film combinations spurred 1960's growth.*

Groups in the news:

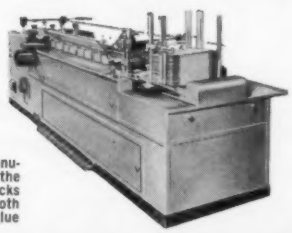
PACKAGING INSTITUTE recently divided the country into four national operating regions. As shown below, each region has a coordinator responsible for all membership meetings held in it—other than technical committee activities:

Region 1, West Coast—C. Paul Bolton, Carnation Research Laboratories, Van Nuys, Calif. Region 2, Midwest—Carl B. Burnside, Eli Lilly & Co., Indianapolis. Region 3, East—Thomas M. Glynn, John H.

(Continued on Page 14)



any cartoning job can be done better, faster and cheaper with a CECO MODEL 40 CARTONER



With products inserted manually, the Model 40 handles the carton automatically. It tucks both ends or glue seals both ends or tucks one end and glue seals the other.

The word that best describes this machine is versatility. Not only can it handle all of the many products shown above, but with a changeover that takes only 20 minutes, it can handle an even wider range of sizes. It handles folding cartons made of lightweight board or corrugated with equal ease. What's more, the relatively low cost for a machine of this speed and flexibility means a minimum investment.

A MACHINE FOR EVERY REQUIREMENT

Other CECO machines include the Model 3901 glue sealing machine, Models 45 and 50 fully automatic machines plus many standard accessories that customize any machine to your individual needs.

CECO

CONTAINER EQUIPMENT CORPORATION
BLOOMFIELD, NEW JERSEY

CONTAINER EQUIPMENT CORPORATION
78 LOCUST AVENUE, BLOOMFIELD, NEW JERSEY

Please send literature checked off:

☐ Model 3901 ☐ Model 40
☐ Model 45 ☐ Model 50

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE_____

For more information circle No. 208 on Reader Service Card

14,000,000 lbs.

National POLYVINYLIDENE CHLORIDE

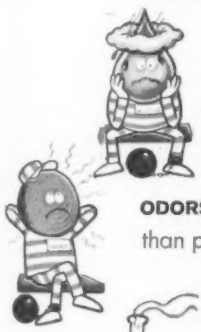
"On Stream to lock 'em in or out—longer."

RESYN® 3600

LATEX FOR PROTECTIVE COATINGS

Our 14,000,000 pound RESYN 3600 plant is now "on stream" at Meredosia, Illinois. This marks the first commercial production of National's water dispersed polyvinylidene chloride and brings combined capacity at Meredosia to more than 80 million pounds of polymer emulsions and latices annually.

RESYN 3600 promises a revolution in protective coatings with simple low cost application by high speed coating machines or spraying. Its barrier properties are exciting and exceptional:



MOISTURE—moisture vapor transmission is 2½ to 5 times lower than that of polyethylene.

ODORS—resistance to transmission of common gases is 1000-2000 times greater than polyethylene.

CHEMICALS—almost complete non-reactivity to concentrated acids, solvents, alkalies and other corrosive materials. Completely resistant to grease and oil.

Fire retardancy is excellent.

RESYN 3600 has already found acceptance in paper and paper converting fields. It may be coated on various paper stocks and converted into multiwall shipping sacks, fiber drums, paper boxes, shipping cartons, paper pouches and food containers.

RESYN 3600 also offers interesting possibilities as a chemical resistant coating, a textile finish, a binder for non-woven industrial fabrics and other uses where its outstanding properties are needed.

Write or call your nearest National office for full information.

National

NATIONAL STARCH and CHEMICAL CORPORATION

750 Third Avenue, New York 17 • 3641 So. Washtenaw Avenue, Chicago 32 • 735 Battery Street, San Francisco 11

And All Principal Cities in the United States, Canada, United Kingdom, Mexico and Australia

Breck, Inc., Springfield, Mass. Region 4, South—Thomas S. Lucas, The Coca-Cola Co., Atlanta.

PI reports there will be at least two meetings under professional membership sponsorship in each region during 1961. It also reports that local groups (with direction and guidance from regional coordinators) are being organized to meet on a regular basis.

Packaging industry speakers at the recent Containerization Conference held by the BULK PACKAGING AND CONTAINERIZATION INSTITUTE said new packaging equipment is under development by machinery designers to expedite packaging and make possible lower strength requirements.

The conference learned that Supplement 18, Uniform Classification 5, effective February 10, 1961, authorizes corrugated boxes of 175-lb. test for contents weighing up to 160 lb., if contents consist of inner corrugated boxes of uniform dimensions and complying with Rule 41, Sections 2 and 3. Normally, 175-lb.-test boxes are authorized for contents not over 40 lb.

Packaging mechanization is reaching the cement industry, the Council of Mineral Economics of the AMERICAN INSTITUTE OF MINING, METALLURGICAL, AND PETROLEUM ENGINEERS *learned. Alfred A. Roetzer, St. Regis Paper Co., recently told the group that warehousing of filled bags permits longer packing runs of each type of cement with minimum downtime. Further, he noted more intensive use of packaging equipment results in needing fewer packing and loading crews.*

Notes from the government:

The JOINT MILITARY PACKAGING TRAINING CENTER, Rossford Ordnance Depot (Toledo), has an extensive program of four-week courses in preservation and intermediate protection, packing and carloading, preservation and packaging, and missile packaging. There is no tuition charge, but you pay your living and transportation expenses. If your company has a packaging contract with at least one of the military services or is a supplier of packaging material to the services, you may qualify. Contact your Service Scheduling Office or write for more information to, Rossford Ordnance Depot, Attn.: ORDWD-JMPTC, Toledo 1, Ohio.

More expansion for packaging:

GENERAL BOX CO. will enter the plastics packaging market with production of its extruded polystyrene foam plastic packaging components.

THE ARABOL MANUFACTURING CO. *has opened two new plants—at Delaware, Ohio and Portland, Ore.—bringing its number of manufacturing facilities to nine.*

CROWN ZELLERBACH CORP.'s largest flexible packaging plant (250,000 sq. ft. of floor area), Hazelwood, Mo., is scheduled for completion June 15.

The boards of MINNESOTA MINING & MANUFACTURING CO. and

(Continued on Page 18)

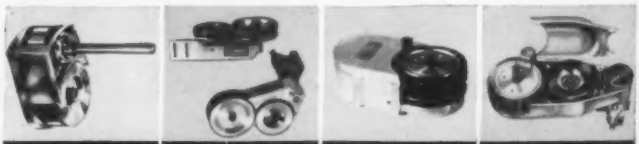
SOLVE YOUR MARKING PROBLEMS!

Reduce maintenance costs! Eliminate costly cleanup!

TEKO CODERS and PRINTERS with Porelon*

Teko marking machines are quality engineered and constructed for continuous trouble-free coding and printing. Their simplicity of design and sturdy construction — antifriction bearings used throughout — guarantee the highest mechanical efficiency.

You save on maintenance costs with *Teko*. Type changeover is simplified; replacement of the Porelon roll takes less than 15 seconds. The six Teko models illustrated deliver up to a half-million impressions from one Porelon roll, depending on type size. The use of Porelon eliminates the difficulty with fluid inks, solvents, felts and reservoirs; because Porelon cannot drip or gum up, cleanup and maintenance time is virtually eliminated.



HIGH-SPEED TEKO 100 SERIES for continuous marking. Can be synchronized with power-driven packaging machines to code top, bottom or side of boxes, cases or cartons. 3 sizes available; wide range of center distances.

TEKO 200 AND 300 SERIES with Porelon, designed specifically for top coding, and the drip problems of gravity fed, fluid ink marking operations. Friction-operated, either registered, continuous or random print.

TEKO 400 SERIES designed for registered or continuous printing. Operates with bag tapers or stitching machines, kraft paper wrapping machines, automatic taping machines. Can be friction or power operated.

TEKO 600 SERIES is the most adaptable friction-operated coder made. Can be mounted to print on any side of any porous or semi-porous carton or sheet. Three printing head widths available.

NEW! FRONT END CASE CODER

THE TEKO 500 SERIES, designed for use on inclined or powered conveyors, case sealers and other carton and case handling machines. Automatically prints on the front panel of cartons; used in conjunction with 600 series coders for three-side carton marking.

Porelon is the trademark of S. C. Johnson and Sons, Inc., for its micro-porous plastics.

For detailed literature, or to arrange an in-plant demonstration of any Teko coder, please write

THOMAS ENGINEERING CO., INC.
9257 N. Laramie Ave., Skokie, Ill., YOrktown 6-3900

Rough handling can't damage delicate instruments

—not when B.F.Goodrich package cushioning protects them. For answers on perplexing package-cushioning problems, write for our data-packed booklet which explains how to select and design package cushioning to reduce damage from shock, vibration. Send request on your company letterhead. The B.F.Goodrich Company, 188 Derby Place, Shelton, Connecticut.

PACKAGE CUSHIONING BY B.F.Goodrich

For more information circle No. 211 on Reader Service Card

Yesterday PVA Film Was Hard to Handle

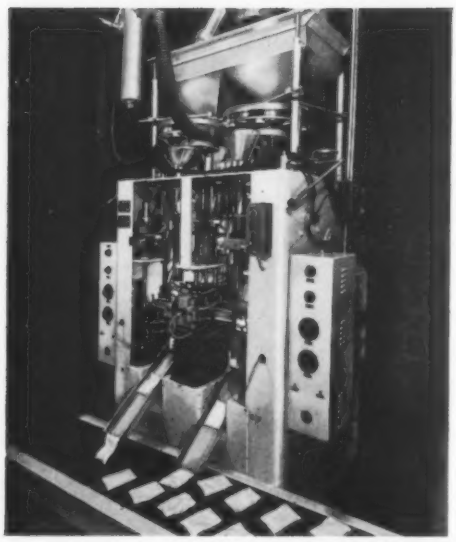
Today a standard 2-tube Robo-Wrap machine teamed with a Lynch volumetric feeder makes PVA as sure and easy to handle as any other film.

At Acepak, Inc. in Chicago, Robo-Wrap is sending the world's leading detergent, soap powder and chemical brands to market at a rate of 110 to 120 PVA packages per minute!

How does a packaging machine designed for other films *also* handle PVA?

Acepak, Inc. looks to Lynch Robo-Wrap... to handle PVA as easily as any other material.

"Robo-Wrap's unique hand-over-hand action reduces machine speed—lengthens dwell time—permits lower temperatures," says Mr. Arthur Rothschild, President, Acepak, Inc.



Robo-Wrap Model 201-V with Lynch volumetric feeder at Acepak, Inc., Chicago, Ill.

The result: less cost per package . . . not enough downtime on volume production runs to worry about, because Robo-Wrap's hand-over-hand action holds jaws in sealing position longer, thus preventing torn roll stock. Robo-Wrap automatically forms, fills and seals pouches and pillow-packs—plain or printed—and runs with or without electric eye registration.

To keep up with demand for PVA packaging, Acepak, Inc. has ordered additional Robo-Wraps.

Whether you package liquids, powders, solids or granules . . . in poly, cello, PVA, plastic or laminate pillow packs . . . look to Lynch for automated systems that cut costs *all along the line.*

Lynch engineers will help plan your handling and packaging system without obligation.

Volumetric Feeders specially designed for trouble-free flow of uniform density products.

Manufacturing Engineers of automatic processing equipment in the glass, packaging, plastic and other industries.

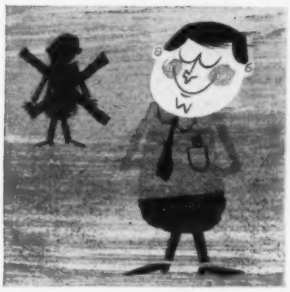
LEADERS LOOK TO LYNCH—for machines that package almost everything

LYNCH CORPORATION • ANDERSON, INDIANA

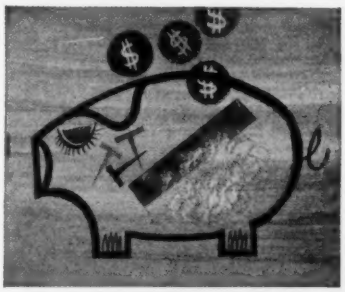
ATLANTA • CHICAGO • SAN FRANCISCO • ENGLEWOOD, N. J.

LYNCH
CORPORATION
Anderson, Indiana

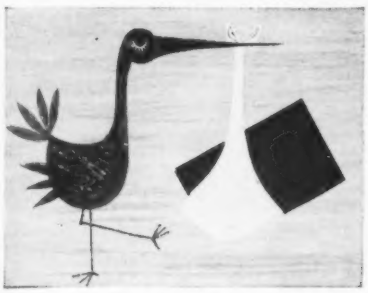
SUS-RAP will increase your profits . . .



. . . because if you use SUS-RAP you can save 50% or more in labor . . .

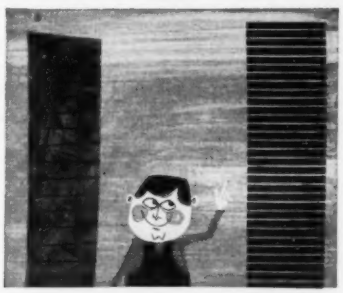


. . . and up to 20% in materials . . .

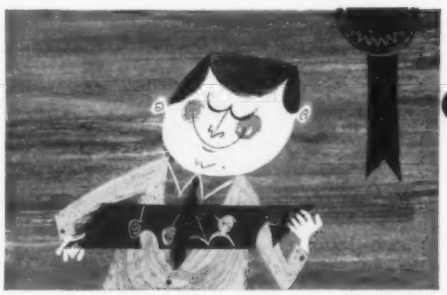


. . . and your products are shipped much more safely . . .

. . . in far less space (which saves your shipping dollars, too) . . .



. . . a SUS-RAP package can be stored in much less space . . .



. . . and your customers will be so very pleased!

SUS-RAP

Laboratory Developed and Tested Packaging

Send for these free packaging booklets

VANANT COMPANY inc. 5847 NORTH 96TH STREET MILWAUKEE 18, WISCONSIN

Read what a few of our customers have to say about SUS-RAP . . .

. . . "SUS-RAP has reduced our labor costs by 50%."

. . . "Our cost figures indicate that for the several sizes of mirrors we are using, we have an average savings in material cost of 11c each."

. . . "Transportation damage has been reduced substantially . . . we have now gone to the use of SUS-RAP 100% and expect to achieve further savings from this fine material."

. . . "Packaging and shipping mirrors has, for many years, presented one of the toughest problems in our field . . . SUS-RAP has helped us to meet this problem. Damage has been reduced and our customers seem to prefer SUS-RAP over other types of packaging for numerous reasons."

. . . "In addition to minimizing the regular handling costs, it has substantially decreased our damage claims because of the added protection."

. . . "It might, furthermore, be of interest to you to know that we have received many comments of approval from our customers in the past several years. They like the fact that SUS-RAP remains on the glass as a protective covering after the mirror is out of the carton."

. . . "We highly recommend this type of carton."

. . . "SUS-RAP protects mirrors after they are taken out of carton and helps in displaying the product."

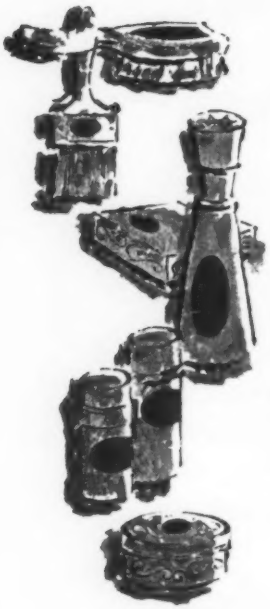
. . . and SUS-RAP could be doing the same job for you. Why not write for the complete story today!

DERBY
DISPENS-A-PLY
PRODUCT LABELER

PRODUCTION LABELING
and
PRICE LABELING

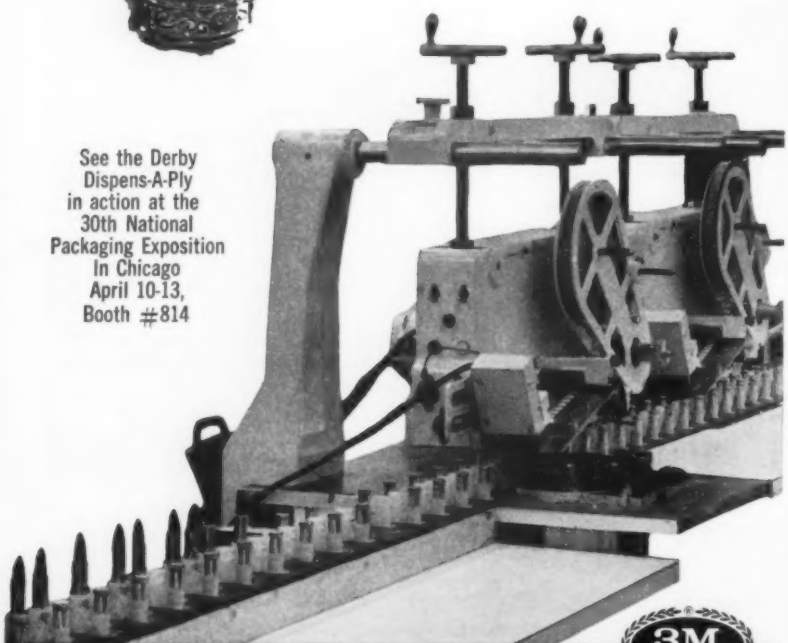
with Pressure-Sensitive Labels . . .
Dispensed and Applied

Automatically



The flexibility of the Derby Dispens-A-Ply Product Labeler is demonstrated by many diverse field installations. A cosmetic manufacturer identifies the color shade of lipsticks on the containers with pressure-sensitive labels . . . a meat packer labels products of many shapes and sizes with a single installation . . . a candy manufacturer labels film wrappings for boxed confectionery . . . distributors price-label nationally-known products . . . and there are many other examples of sale-price labeling, premium deal labeling and special offers requiring spot labeling . . . all applied with the versatile Derby Dispens-A-Ply.

See the Derby Dispens-A-Ply in action at the 30th National Packaging Exposition In Chicago April 10-13, Booth #814



DERBY SEALERS DIVISION
MINNESOTA MINING AND MANUFACTURING COMPANY
DERBY, CONNECTICUT

3M COMPANY
. . . WHERE RESEARCH IS THE KEY TO TOMORROW

WARNER-LAMBERT PHARMACEUTICAL CO. have agreed to terminate negotiations to combine the two companies.

MONSANTO CHEMICAL CO.'s *plastics division will increase the capacity of its high-pressure polyethylene plant in Texas City, Tex., by 30 per cent.*

CONTAINER CORP. OF AMERICA is establishing a plant in Houston, Tex., to manufacture corrugated paperboard packaging products.

CONSOLIDATED ALUMINUM CORP. has acquired NATIONAL FOIL CO., INC.

Full production of Fortiflex R resins is underway at CELANESE POLYMER CO.'s *new polyethylene plant near Houston, Tex.*

THE MEAD CORP. has acquired the controlling interest of THE CHATFIELD & WOODS CO. and its subsidiaries.

A 170,000-sq.-ft. pulp molding plant will be built by KEYES FIBRE CO. at Sacramento, Calif.

What people are doing:

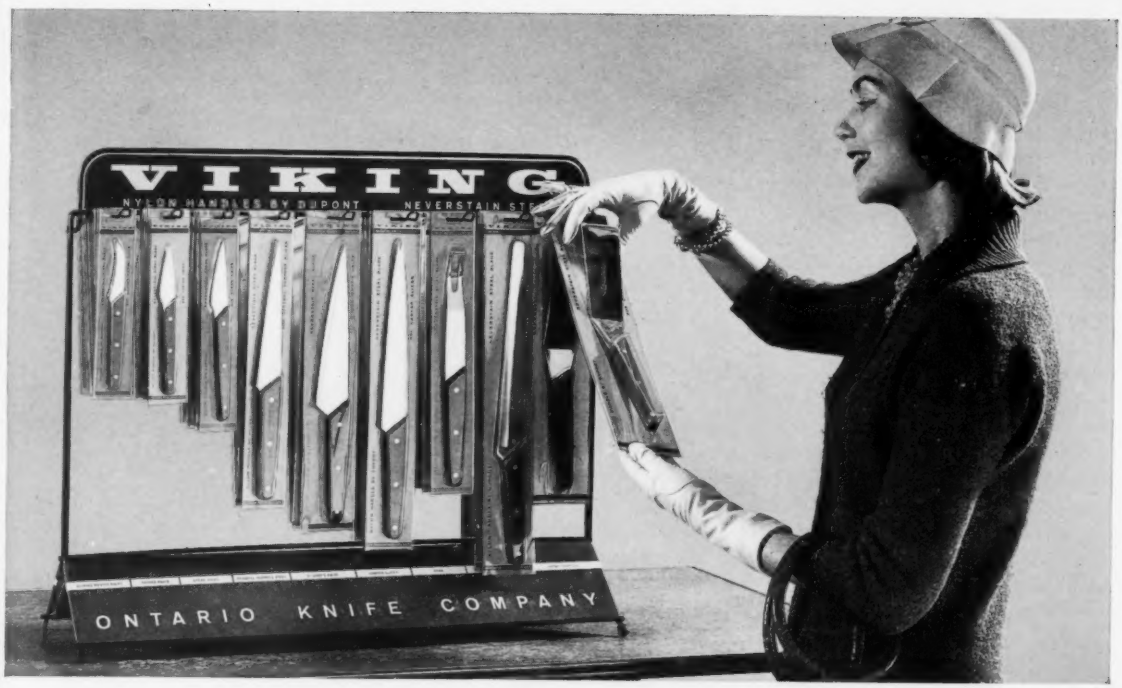
The director of Stauffer Chemical Co.'s newly created department of packaging and labeling is JAMES H. BEGLEY.

Packaging Institute has named NATALIE SAMUELS technical editor. Mrs. Samuels was previously with Robert W. Bloch Public Relations, and earlier with Hudson Pulp & Paper Corp.

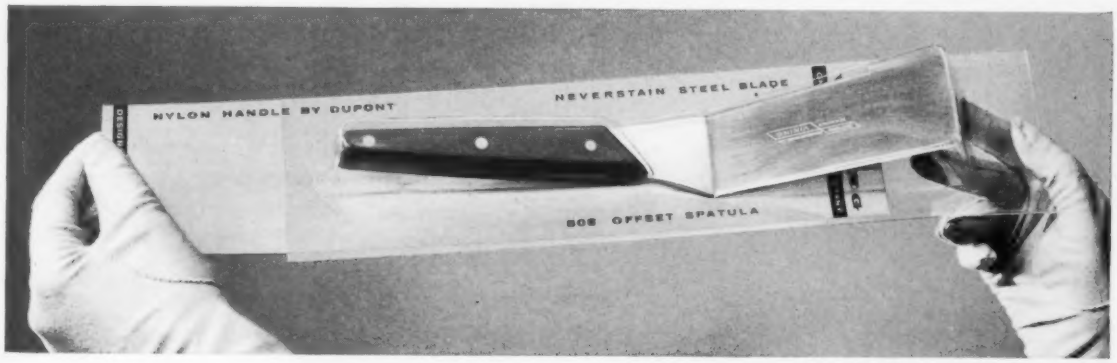
VERN I. MCCARTHY, JR., president of Vulcan Containers Inc., has been named to membership in the Young Presidents' Organization, a national group of more than 1600 business leaders who achieved presidency of their firms before their 40th birthdays.

HENRY P. TROUNSTINE *is now a vice president of Clopay Corp. Formerly, he was general manager of the company's extruded products division.*

LENVIK YLVISAKER has been elected vice president of research and engineering at Continental Can Co. Mr. Ylvisaker had been general manager of Continental's metal research and development department in Chicago. *(Turn page)*



For ease of forming and deep draws —Kodapak Sheet provides the answer



For a market where eye-appeal is important, Ontario Knife Company called on designer Michael Lax to create a versatile new line of Viking Knives.

Then Ontario turned to Kodapak Sheet for packages which would protect the fine steel blades and let the customers see the knives' design.

Why Kodapak Sheet? Because this tough, crystal-clear transparent plastic is easily formed—even when called on to handle the deep draws required in packaging the offset spatula shown.

Perhaps you depend upon good design to help you sell your product. If so, perhaps it would move faster if it were packaged in Kodapak Sheet. To investigate, call our representative or write:

EASTMAN KODAK COMPANY
Plastic Sheeting Division, Rochester 4, N.Y.

Kodapak SHEET

Sales Offices: New York, Chicago, Atlanta. Sales Representatives: Cleveland, Philadelphia, Providence. Distributors: San Francisco, Los Angeles, Portland, Seattle (Wilson & Geo. Meyer & Co.); Toronto, Montreal (Paper Sales, Limited).

"Kodapak"—trademark for Eastman's Plastic Sheet

WAYNE WHEELHOUSE joins the general engineering department staff of Bemis Bro. Bag Co. Mr. Wheelhouse, who was formerly technical and development director of Container Corp. of America's Sefton Fibre Can Div., will specialize in adhesive problems.

*Organizational changes at The Mead Corp.'s containers division are—*GEORGE W. MITCHELL *is now regional manufacturing manager for the central region;* RALPH REDMOND, JR. *succeeds Mr. Mitchell as district manager at Flint, Mich.;* JOHN A. ZINKE, *former sales manager at Toledo, becomes Toledo district manager.*

R. J. WORTHINGTON has been promoted from sales representative to assistant sales manager, industrial and dairy products, St. Louis, for Crown Zellerbach Corp.'s Western-Waxide Div.

ROBERT B. RICHARDS is now a member of the Walter Frank Organization's sales-engineering staff.

GEORGE BROWDER *has joined National Starch and Chemical Corp. in engineering sales. He will work out of the New York office.*

Thomas Engineering Co. has appointed HOMER R. CULP manager of manufacturing. Mr. Culp formerly was a plant superintendent for Arthur Colton Co.

THOMAS J. ANGOLD is now manager of IMCO Container Co.'s Kansas City plant. Previously, Mr. Angold, who has been with IMCO for nine years, was supervisor of the secondary department.

After many years of experience as installation and field engineer for New Jersey Machine Corp., HERMAN KARL SCHOENHEITER *has been promoted to technical sales and service engineer.*

TOM MCNERNEY will handle sales coverage in Indiana, Ohio and Kentucky for Morningstar-Paisley, Inc.'s adhesives division. His headquarters will be Indianapolis.

ADOLPH MILLER is now vice president, research and development, for Milprint, Inc. Previous to joining Milprint as director of the research division in 1959, Mr. Miller was with Standard Packaging Corp.

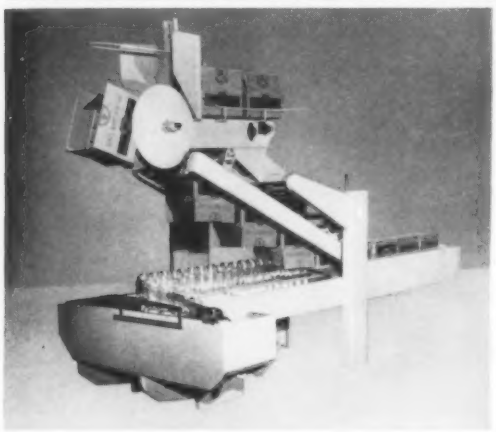
ARTHUR R. AMACHER, *a former sales representative for Dennison Manufacturing Co., is now national sales manager of Stone Container Corp.'s paper tag division.*

FRANK M. HARDING, who was previously with Chippewa Plastics Co., has joined Koppers Co., Inc. as product manager, converter and industrial sales.

New sales representatives at Diamond National Corp.'s Gardner Div.—HOWARD K. ROXBOROUGH, P. JACQUES LOIZEAUX and EDWARD O. COOKE will cover the Northeastern area and will headquarter in New York City; RUSSELL A. GAUL will cover the Southeast and headquarter in Philadelphia.

STANLEY MACFARLAN *is now territory manager, West Coast, for Bartelt Engineering Co., Inc.*

The Lakso Co., Inc. has appointed JOHN DAILEY direct factory sales and service representative for the Midwest. *(End)*



Del Monte pickles are filled in these 24 oz. jars being unloaded on a MacArnett Engineering Co. Automatic Case Unloader and Single Liner at California Packing Co.'s San Jose plant. Notice easy drop of jars on mesh belt—flaps lift clear of containers. Inner case liner is held so firmly it won't drop out.

NEW!

MAC Bottle Uncaser and Unscrambler

For Regular round bottles—Wide mouth jars Flat hip flasks—Rectangular or oblong—Panel-type or oval—Tapered and odd shapes—Plastics

Special Features
Powered Case Flap Opener
Case Return Unit
Powered Disc Discharge

Case Range	W	8½"—14"	**Speeds**	
6 containers or	L	10"—22"	Cases per minute	8—20
more with inserts	H	4"—12"	Bottles per minute	200—500
Container Range			**Discharge**	
Diameter		2"—6½"	Right angle or straight out	
Capacity		8 oz.—1 gal.	**Floor Space**	3' x 13'6"

Write for **NEW** *bulletin with complete specifications and case histories.*

Economic Machinery Company

60 FREMONT ST., WORCESTER 3, MASS.

Division of Geo. J. Meyer Manufacturing Co.

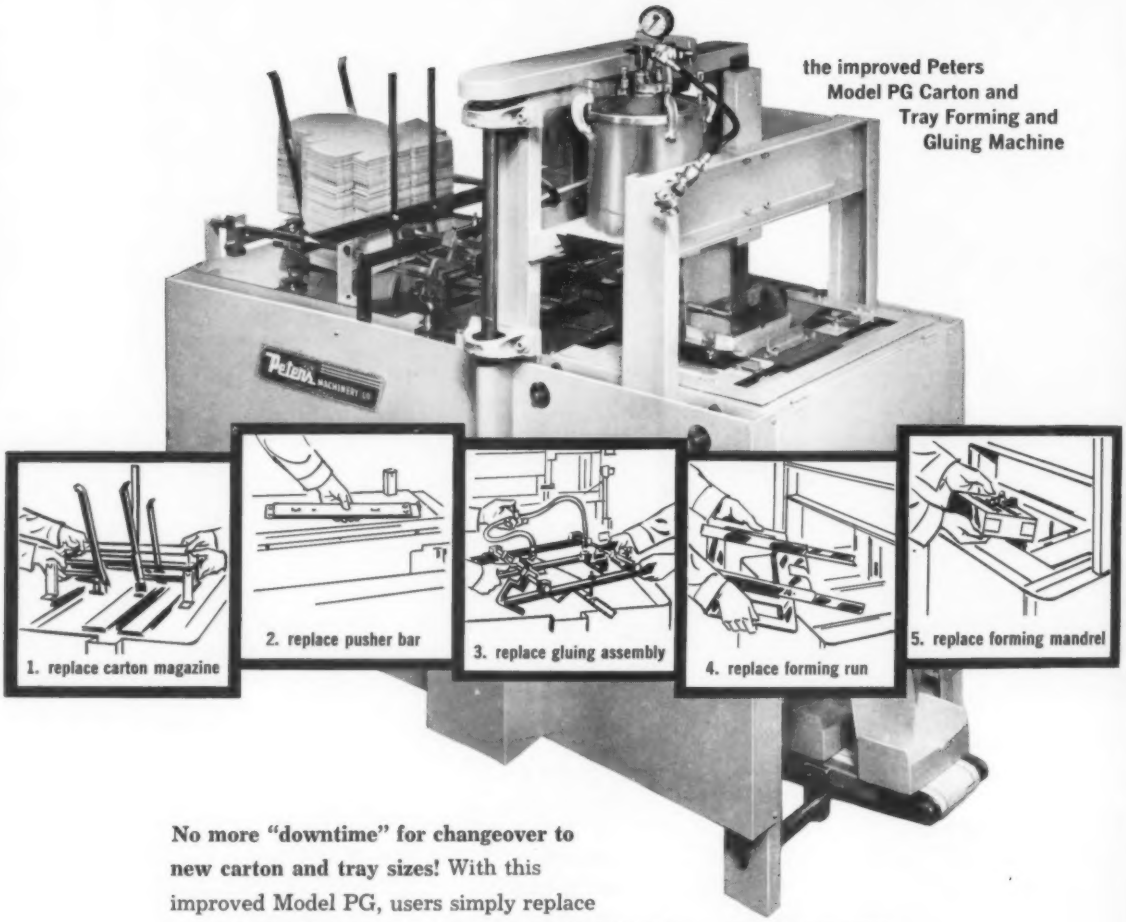
For more information circle No. 216 on Reader Service Card Circle No. 217 on Card ▶

when you make your next packaging decision, we'd like to be on hand showing you how readily liquids dispensed by the new captive cap closures are used, used up, and bought again

Armold Plastics Division, Totowa Borough, New Jersey

CCA CONTAINER CORPORATION OF AMERICA, CHICAGO 3, ILLINOIS

NOW ONLY 5 MINUTES FOR A NEW CARTON SIZE!


the improved Peters Model PG Carton and Tray Forming and Gluing Machine
1. replace carton magazine
2. replace pusher bar
3. replace gluing assembly
4. replace forming run
5. replace forming mandrel

No more "downtime" for changeover to new carton and tray sizes! With this improved Model PG, users simply replace assemblies when new size is needed, *without tools* . . . cuts changeover time from one hour to five minutes! **Still forms and glues up to 70 cartons or trays per minute,** and handles a wide range of sizes, too! **Still with the new closed glue system** which permits immediate operation without lengthy make-ready and eliminates need for clean-up after operation.

Peters

Write for descriptive literature today!

MACHINERY COMPANY

4700 N. Ravenswood Avenue • Chicago 40, Illinois • LOngbeach 1-9000

SEE A DEMONSTRATION IN OUR PLANT WHEN YOU ATTEND THE PACKAGING SHOW IN CHICAGO • *PHONE FOR TRANSPORTATION*

PACKAGE DESIGNERS, ENGINEERS . . .

Learn how you can take advantage of automated packing with KEYES MOLDED PULP SHAPES

Through proper design molded pulp can become more than a packaging material. It can be the key to *automated packing* because it requires no fillers or dividers, no hand set-ups . . . thus is uniquely adaptable to production line packing.

This means savings for you on material handling costs, breakage and very often means more protection with less material involved.

Keyes maintains a complete staff of design engineers who can work with you in packaging your products faster, safer and more economically.

For information on this design service and your copy of a new Keyes booklet entitled "How You Can Take Advantage of Automated Packing with Keyes Molded Pulp Shapes", write on your letterhead to Mr. Dudley Smith, Product Development Manager, Keyes Fibre Company, Dept. PE-4, Waterville, Maine.

KEYES
MOLDED PRODUCTS

For more information circle No. 219 on Reader Service Card

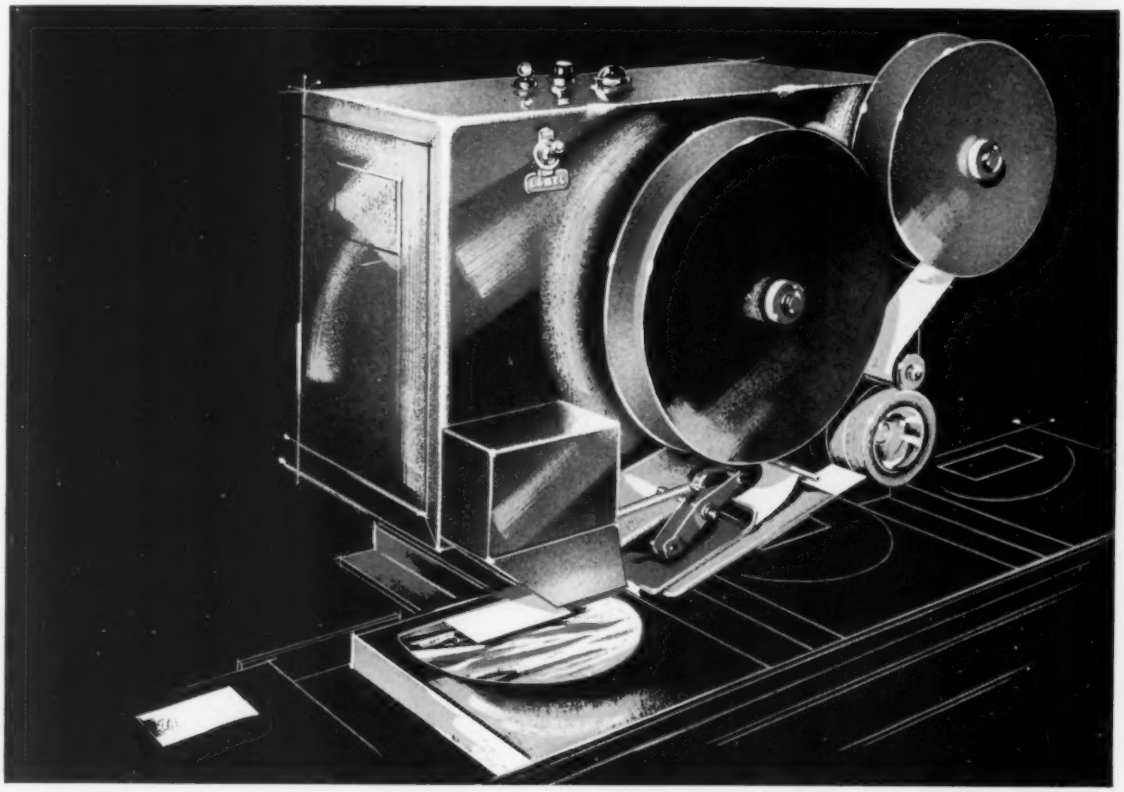
helping hands—for sale now

Pressed again for shipping room time?
Plagued by off-again on-again delivery
schedules? Need extra hands now?
Consider the Dialmizer automatic case sealer.
Requires no daily cleanup at all.
Its glue applicators are hermetically sealed,
pressurized, too. Seals cases night
and day—automatically. ABC packaging
machinery works wonders. What particular
wonder do you want worked—tomorrow?

DIALMIZER AUTOMATIC CASE SEALER

ABC PACKAGING MACHINE CORPORATION
P.O. Box 1146, Clearwater, Florida

FROM KLEEN-STIK .....WORLD'S FIRST "JET-ACTION" AUTOMATIC PRESSURE-SENSITIVE LABEL APPLICATOR!



kleen-stik® "LABEL-AIRE"

JET-FAST . . . JET-SMOOTH . . . JET-PERFECT!

Actually picks up and applies labels by "AIR–JET" Action!

1. In-coming air jet picks up label as it peels off backing
2. As package or product trips micro-switch, reverse (outgoing) air jet "shoots" label into exact position

Here's the machine that brings new speed, ease, and economy to pressure-sensitive labeling on the production line. Unlike "conveyor-type" applicators which pull the label from the backing by adhesive tension, the Kleen-Stik "Label-Aire" operates on an entirely new "jet action" principle. Manufactured to highest quality standards . . . thoroughly tested for reliability . . . *guaranteed* by Kleen-Stik.

No Heat - No Water - No Glue - No Hand Operations!

kleen-stik® PRODUCTS, INC.

7300 West Wilson Ave. • Chicago 31, Ill.

Plants in Chicago, Newark, Los Angeles, and Toronto, Canada

- Handles Kleen-Stik Roll Labels from ½" to 3" wide
- Labels any material . . . . any shape of package
- Perfect registration—adjustable to any production line speed
- Compact . . . lightweight . . . easy to use
- Available on lease — no heavy investment

Write for complete details on the new Kleen-Stik "Label-Aire"

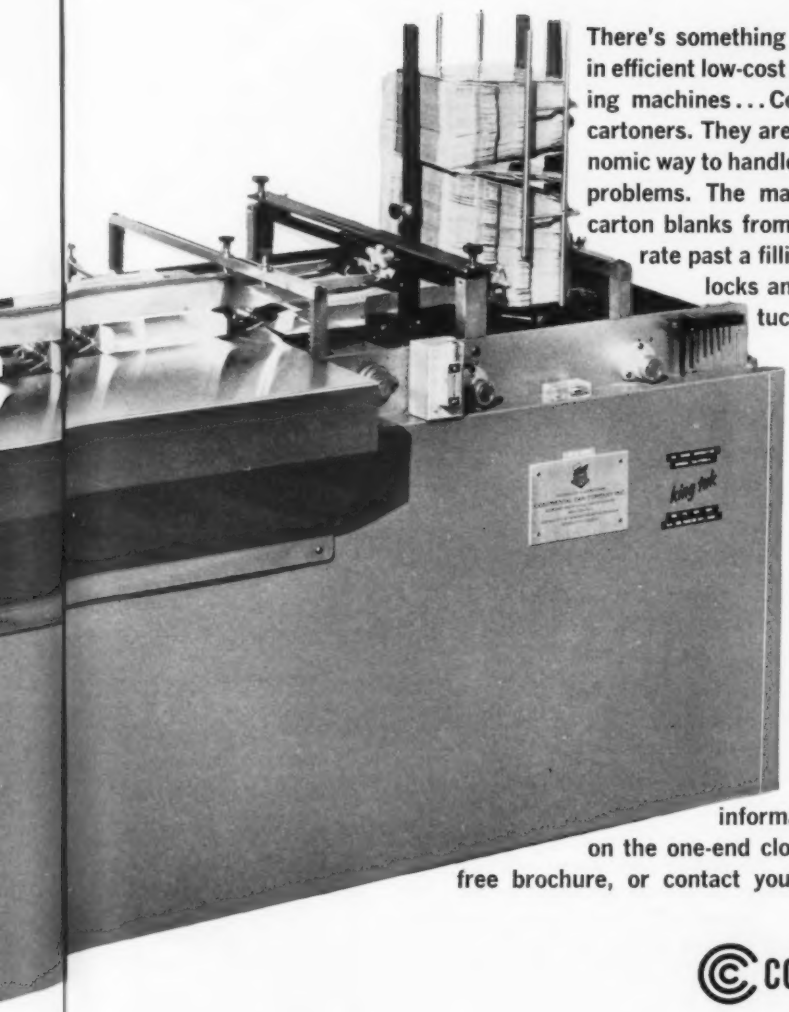
SEE IT IN ACTION! PACKAGING SHOW–BOOTH Nos. 1238 & 1239

CUT PACKAGING COSTS WITH CONTINENTAL'S KING-TUK TEAM OF LTG* CARTONING MACHINES

*LOCK, TUCK, OR GLUE

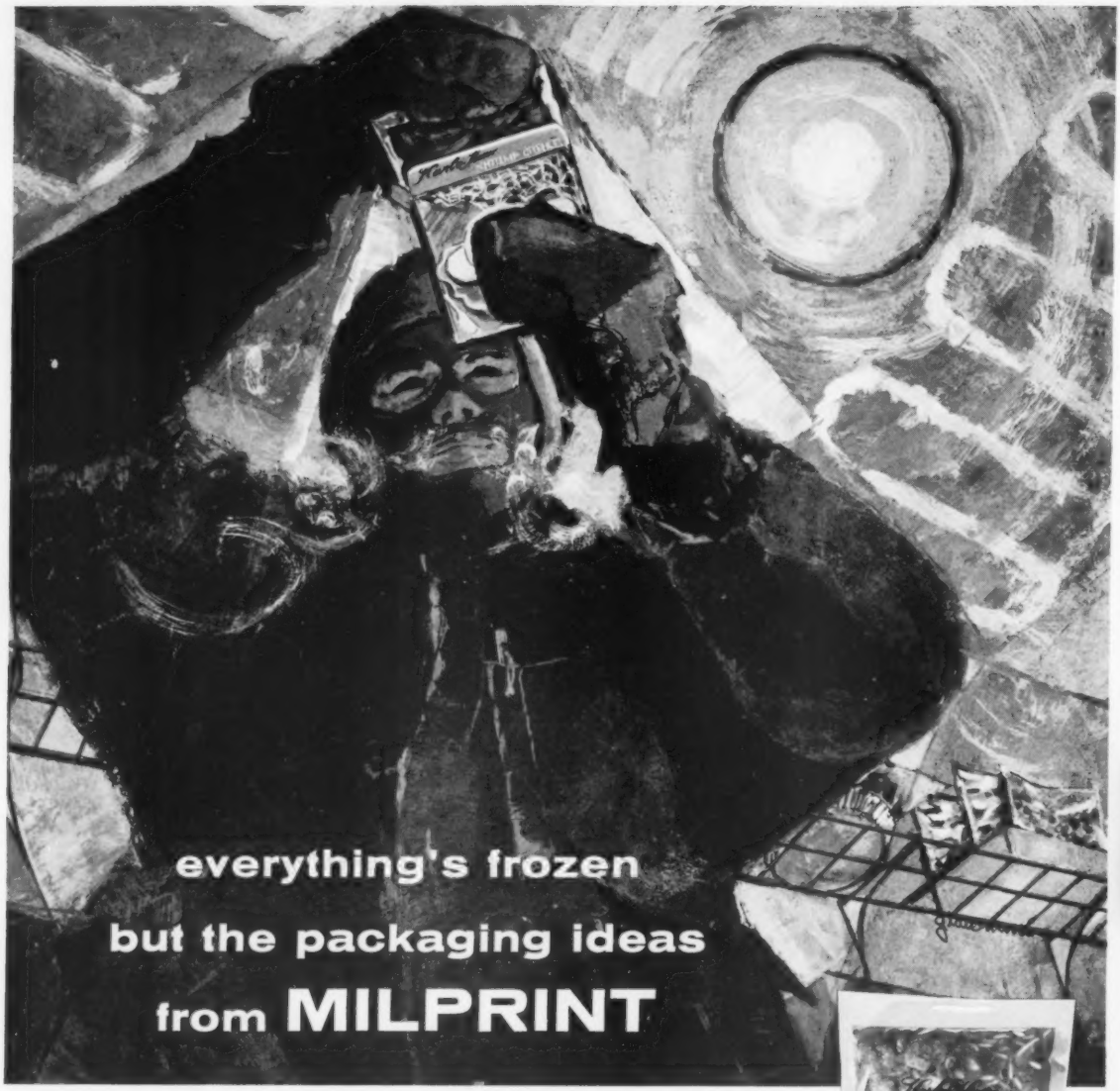
KING-TUK CLOSEMATIC CARTONER

KING-TUK
OPENMATIC CARTONER



There's something new in efficient low-cost cartoning machines... Continental's exclusive King-Tuk LTG cartoners. They are the most versatile, simple, and economic way to handle all small and medium size cartoning problems. The marvelous King-Tuk Closematic feeds carton blanks from a hopper, conveys them at a given rate past a filling station, then securely locks (edge locks and interlapping flaps), tucks (reverse tuck or straight tuck), or glues (four flap seal end) them closed. The full and sealed carton is ejected, ready to be loaded into freezer trays and shipping cases. Because of its special design and perfect timing all parts travel at the same speed as the carton. The result is a continuous motion operation capable of setting up and closing as many as 90 cartons a minute. There is a minimum of carton spoilage because the slightest jam stops the machine. And fewer moving parts make the maintenance of the King-Tuk Closematic economy itself. For further information on this cartoning must... also on the one-end closing Openmatic... write for detailed free brochure, or contact your Continental representative today.

FOLDING CARTON OPERATION
CONTINENTAL CAN COMPANY
530 FIFTH AVENUE, NEW YORK 36, N. Y.
OVERSEAS DIVISION: 530 FIFTH AVENUE, NEW YORK 36



Now...a boil-in-pouch that works! From Milprint's dynamic research comes the first completely successful pouch for the fast-growing boil-in package field: new KETTLE-REDI pouches by Milprint!

Kettle-Redi's superior lamination stands up under temperature extremes from boiling to 50° below without cracking or leaking . . . remains unaffected by any combination of thermal and chemical factors . . . resists scuffing and tearing . . . offers excellent machineability plus exclusive "locked in" reverse printing that defies age or handling — lifelike flexographic or rotogravure printing that stays better looking at the point of sale!

Call Milprint now for information on Kettle-Redi pouches for cook-in applications!

MILPRINT PACKAGING *gives your product* MARKETING POWER

KETTLE-REDI is a Milprint trademark.

Milprint, Inc. General Offices, Milwaukee, Wis. Sales Offices and plants conveniently located across the nation.

WHAT ARE YOU DOING

TO BE NOTICED?

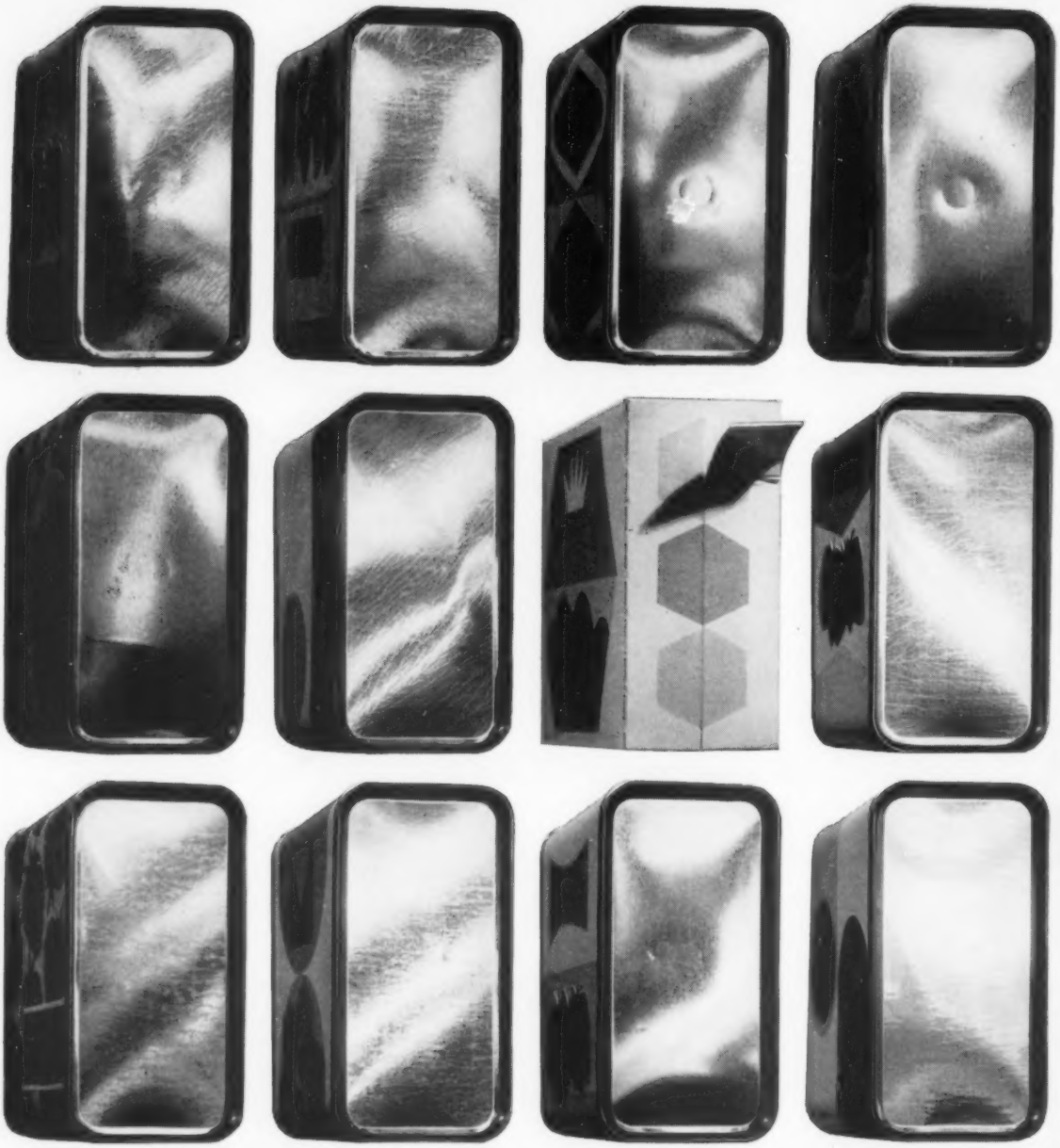
By emphasizing *both* sides of your container you can put new sales allure in your packaging. Multiple labeling enhances the product . . . offers the ideal display area for premiums, recipes, or tie-in promotion . . . *and* gives the consumer that something *extra.*

Write for your copy of *"What Are You Doing To Be Noticed?"*.

Good Labeling Sells!

WORLD LABELERS

ECONOMIC MACHINERY COMPANY • WORCESTER 3, MASS. / Division of Geo. J. Meyer Manufacturing Company



WHICH ONE COMES FROM FIBREBOARD?

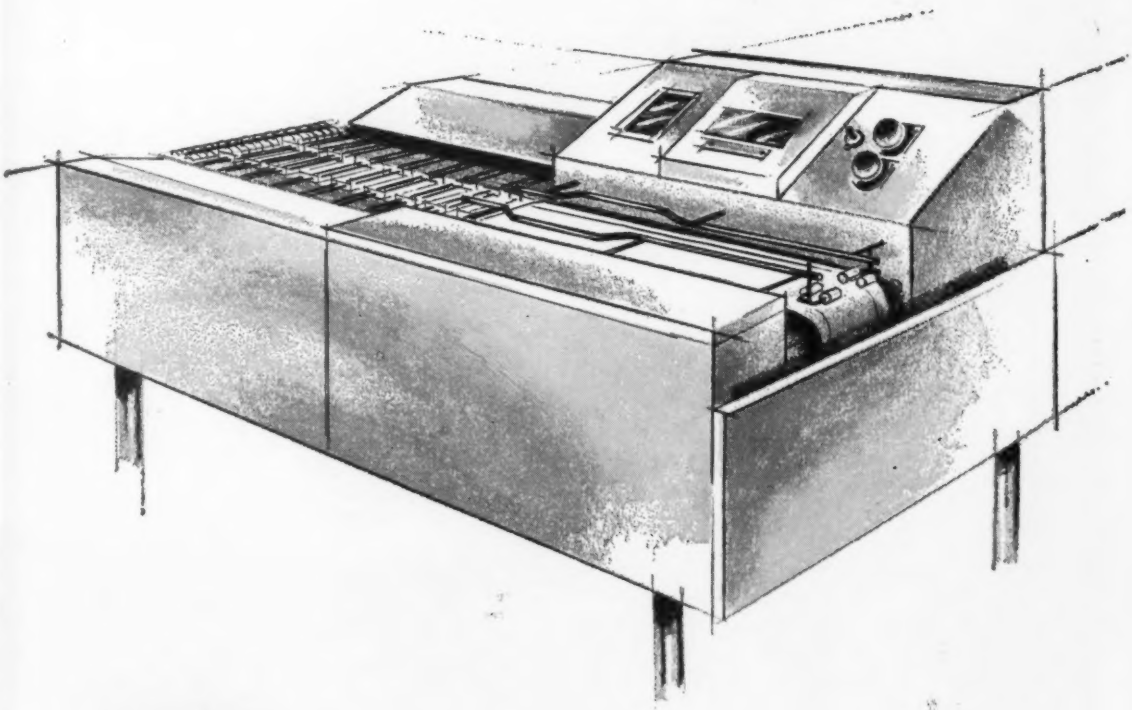
Which carton was created by a team of frozen food specialists—including designers and engineers, salesmen and scientists? Which carton comes from the company where every major industry is covered the same, sensible way: by teams of experts in that specific field? Which carton, in short, comes from Fibreboard? Your customers can pick it out—and do.

The carton from Fibreboard: easy-opening Fibrematic, the minor miracle for frozen strawberries. You simply grasp the flap—and let 'er zip! No more metal ends . . . and Fibrematic is leakproof, airtight, easy to fill. Shouldn't your cartons come from this kind of company, this type of concept? Write: Fibreboard Paper Products Corporation, 475 Brannan Street, San Francisco. (Also New York, Chicago, Los Angeles, other major cities.)

Automatic Weighing IN MOTION with Featherweight Accuracy

When the line runs, capacity counts! Illumitronic Checkweighers, Weight Classifiers and Monitors, weighing in motion, combine speed with featherweight accuracy for economies up to 50% over halt-and-hurry hand weigh methods. Our equipment automatically weighs packages to 10 pounds, with continuous flow speeds to 300 units per minute. Accuracy ±1/30th of 1 ounce; range adjustable from 1/10th of 1 ounce to 2 ounces. Multiple channels for 2, 3, and 5-way classifying of cartons, bags, pouches, overwraps, cans, tubes. These machines are at work withstanding environmental conditions of production lines in frozen, canned and dried foods, meat processing, dietary supplements, dry and liquid detergents and others. Want to know how and where? Drop us a line or pick up the phone and dial 415, RE 9-2395.

Canner? Ask about our high-speed wrap-around label inspection equipment!

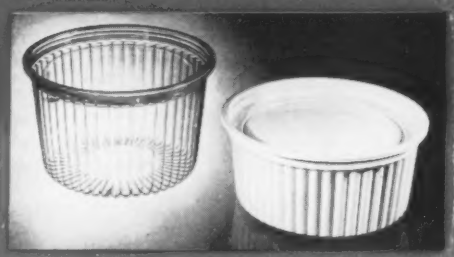


illumitronic systems corporation
680 east taylor • sunnyvale, california

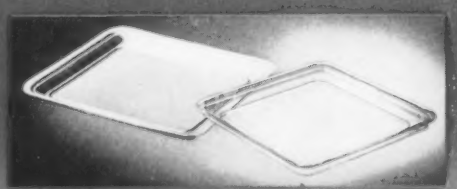
J-E...First Again

In Plastic Containers for Fresh and Frozen Foods

Transparent and Colored Opaque Containers — Design-Engineered by J-E for High Speed Filling . . . Stacking . . . Merchandising



J-E round containers, ideally suited to protect and display fresh or frozen foods. Designed with extra base strength for high speed filling at plus-boiling temperatures. Special J-E rounds are available for automatic food canteens. Available with snap-over or snap-in lids, printed or plain.



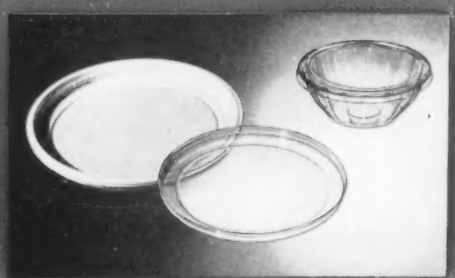
The only square snap-in lid, a product of two years' research. Lids fit perfectly, **stay snapped-in** . . . are recessed for neat, non-slide stacking. Many foods previously packaged in air tight containers are adequately protected with 75% to 80% air elimination. Easily removed lid is just as easily replaced for refrigerator storage. (Patent Pending.)

FROM ONE SOURCE...

The Container . . . the Lid . . . Multi-Color Printing for brand identification! J-E containers can be filled at boiling temperatures . . . immediately quick frozen at —80°F in a dry freezing process or —350°F in liquid freezing. J-E containers are lightweight, nest for shipping, reduce freight rates to a minimum.

J-E ENGINEERS AND RESEARCH MEN ARE AVAILABLE TO HELP FOOD PROCESSORS AND PACKERS MAKE THE MOST OF THE WONDERFUL NEW WORLD OF PLASTIC PACKAGING FOR FRESH AND FROZEN FOODS!

J-E pressure formed containers—square or rectangle—available in any size and with divided bases for multi-product sales. Sparkling clear or colored opaque . . . designed for extra strength, feature a firm lip perfectly matched to J-E lids.



Any automatic capping machine will handle the J-E lid. Stacking lugs and engineering changes in tapers provide a lid which will not slip, slide or jam. J-E lids, plain or printed, also available for paper, molded plastic and other conventional containers. And J-E lids stay snapped-in, are easily removed and replaced.

J-E's unique, curled-over heat seal remains tough and resilient, won't crystallize or crack even during deep freezing. Excellent non-aging characteristics. Covers for heat sealing are recessed for stacking. • J-E transparent snap-over domes for cardboard or styrene trays and flanged domes for aluminum or paper trays contribute sales appeal . . . eliminate need for foil laminated separator sheet on sugar-topped baked goods . . . are replaceable and reusable.

J-E PLASTICS MANUFACTURING CORP.

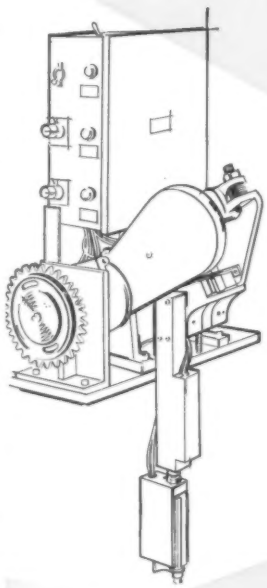
400 NEPPERHAN AVENUE, YONKERS, N. Y. • PHONE GR 6-3456

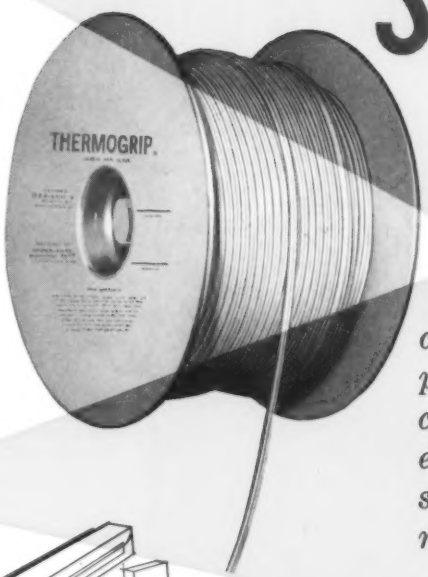
America's largest designer-producer of semi-rigid plastic packaging

THERMOGRIP®

HOT MELT ADHESIVE MEANS

SPEED





Means control.
Means versatility.
***THERMOGRIP** is the hot melt adhesive in cord-like form that provides packagers and converters with an exact method of perfect sealsmanship on a wide range of materials.*

THERMOGRIP means split-second speed. Has been proven in packages that contain everything from biscuits to building products to plants. *THERMOGRIP* establishes instant bond . . . permits immediate inspection . . . saves machine space . . . increases production volume.

THERMOGRIP means accuracy that is controlled by seven applicator models, including wheel and nozzle types. All are readily adaptable to your present or in-blueprint-stage equipment. *THERMOGRIP* is applied intermittently or continuously in whatever shape does the job best — dots, dashes, wide or narrow bands.

THERMOGRIP means versatility. Answers sealing problems on the surface and beneath, whether foil, polyethylene, plain boards, waxed boards or porous paper.

Whatever your packaging or sealing need or problem, *THERMOGRIP* adhesives provide a fast, accurate, versatile answer. Write us your story.

See us at Booth 1126, National Packaging Exposition.

United

UNITED SHOE MACHINERY CORPORATION
140 Federal Street, Boston 7, Massachusetts

The third in a series of U. S. Patents
covering the manufacture, fabrication
and use of triple-wall corrugated
was granted to Tri-Wall Containers, Inc.,
on January 24, 1961.

Tri-Wall Containers, Inc.
799 Washington Street · New York 14, New York

IT'S BOUND TO BE BETTER WITH USS STEEL STRAPPING TOOLS

New air-powered tool speeds strapping of boxcar parts at Pullman-Standard

There is no more burdensome hand-operated strapping done at Pullman-Standard division of Pullman Incorporated. They now automatically flat strap steel boxcar flooring and steel compartmentizer doors with the new USS pneumatic Model 7300 stretcher. A slight twist of the control knob on this heavy-duty machine automatically stretches strapping to a pre-set tension. Result: A tighter, more compact bundle with no shifting or damage in transit.

The portable Model 7300 is built for long service, little upkeep. It's lightweight, simple to operate. With the Model 7300, you can have a uniform strapped package every time. There's no repackaging because of loose straps. This automatic machine can unitize and palletize any size shipment faster and better than any previous method.

Learn how the Model 7300 can upgrade your strapping operation. For more information, send the coupon.

U. S. Steel Supply
Division of
United States Steel

USS
TRADEMARK

U. S. Steel Supply
U. S. Steel Corporation
208 South LaSalle Street
Chicago 4, Illinois

Please send me more information on the new automatic USS Model 7300 Stretcher

Name _____

Company _____

Address _____

City _____ Zone _____ State _____

NEW FROM EASTMAN

TENITE Polyethylene is now available in formulations containing a new ultraviolet inhibitor that gives them superior resistance to sunlight and weathering

- **Exposure tests prove the superior durability of polyethylene film, sheet and moldings stabilized with new Eastman inhibitor**
- **Effectiveness is not impaired by molding or extruding temperatures up to 600°F.**
- **Stabilized film retains a high degree of clarity, flexibility, smoothness and toughness**
- **The new inhibitor markedly extends the useful life of polyethylene film for greenhouse glazing...silo, storage and machinery covers**

TENITE SALES OFFICES:
Atlanta, Chicago, Cleveland, Dallas, Dayton, Detroit, Greensboro (N. C.), Kansas City (Mo.), Leominster (Mass.), New York City, Philadelphia, Rochester (N. Y.), St. Louis, Toronto.

WEST COAST REPRESENTATIVE:
Wilson & Geo. Meyer & Company, San Francisco, Los Angeles, Portland (Ore.), Seattle.

New, specially stabilized Tenite Polyethylene formulations for extrusion into thin, transparent, weather-resistant film are now available from Eastman. Incorporated in the resins is a new non-pigment ultraviolet inhibitor developed by Eastman chemists.

The effectiveness of the inhibitor is not impaired by molding or extrusion temperatures as high as 600°F. This, too, represents an improvement over polyethylene formulations stabilized with previously available ultraviolet inhibitors.

Film only 5 mils thick, extruded from a typical Tenite Polyethylene formulation containing the new inhibitor, has withstood two years of continuous outdoor weathering with little loss of strength. Results of tests on the exposed film show that it retained more of its original properties after 24 months' exposure than film of unstabilized polyethylene retained after only 12 months' exposure.

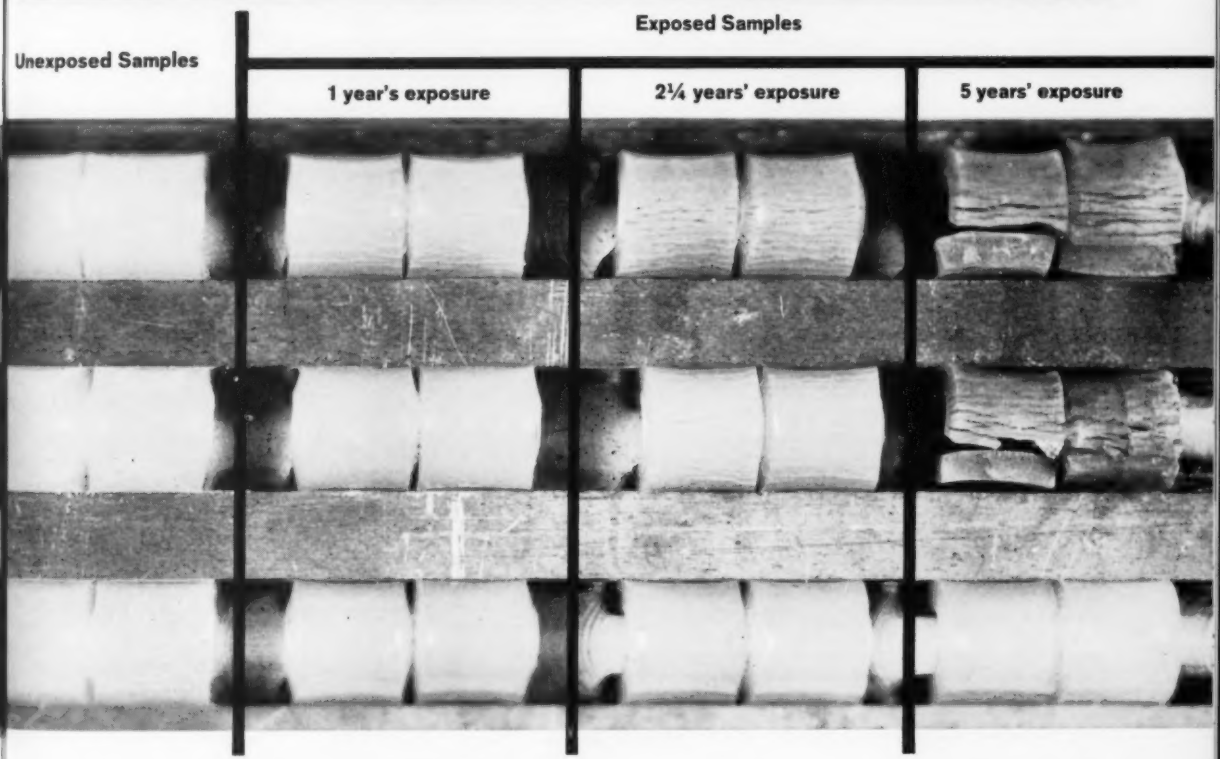
Specifically, the stabilized film retained a high degree of original clarity, and remained smooth, pliable and tough.

The demonstrated superior performance of the new stabilized resins greatly extends the usefulness of polyethylene film in such outdoor applications as glazing for greenhouses, and protective covers for silage, machinery and other outdoor-stored materials.

Eastman also supplies a stabilized Tenite Polyethylene formulation for extrusion of sheet 50 mils or thicker as well as for injection molding of heavier sections. In weathering tests recently completed, 50-mil sheet of this material retained 88% of initial elongation after three years of outdoor exposure. Heavier sections (125 mils), weathered under stress, still retained their good appearance after five years. Such results indicate that polyethylene sheet and molded parts can be expected to resist the elements two to three times as long as was previously possible.

For further information on Tenite Polyethylene formulations stabilized with the new ultraviolet inhibitor, contact any of the Tenite sales offices, or write EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.

WEATHERABILITY OF STRESSED TENITE POLYETHYLENE



Pictures are better than words!

Here is an unretouched photograph showing a test rack of stressed molded specimens after 5 years of continuous exposure in Tennessee. Specimens were 125 mils thick and were molded from a typical base formulation of Tenite Polyethylene. The photograph forcefully illustrates the effectiveness of Eastman's new ultraviolet stabilizer.

TENITE®
POLYETHYLENE
an Eastman plastic

...first in Pouch Packaging

fmc announces the

STOKESWRAP "1000"

the completely new pouch-forming, filling and sealing machine with almost unbelievable versatility!

From FMC—who introduced pouch-packaging equipment and developed Stokeswrap, the standard of the industry — now comes the new "1000," a double-tube machine with all the advantages of two single-tube machines, but at less cost. The many new design features of the "1000" give the equipment an amazing flexibility that makes it ideal for large and small plants alike.

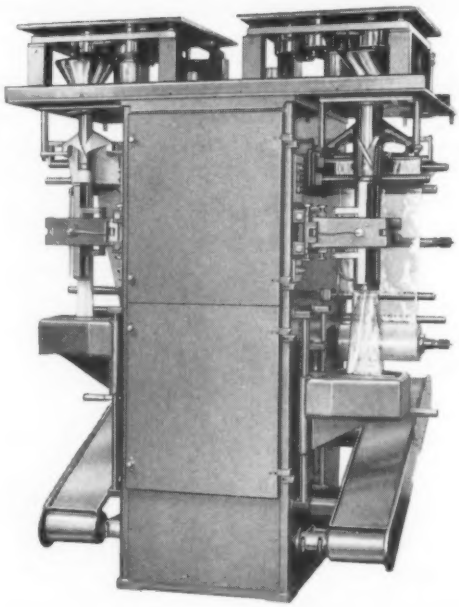
In addition to including all the proven Stokeswrap features for packaging free-flowing products such as frozen foods or candies, the "1000" has been designed to be the most versatile pouch-making machine available.

The amazing versatility of the "1000" is due to the separate drives that make it possible to operate either of the two tubes independently of the other.

The "1000" can simultaneously . . . run two different types of film . . . in two different sizes . . . with two different products . . . by means of two different feeds . . . with two different types of sealing method . . . and two different types of pouch . . . at two different speeds.

Further, production is continuous. If one side is shut down for changeover or maintenance, the other side continues to operate. And the "1000" can be purchased as a single-tube unit and the second tube added later, all at less cost than separate units.

PLUS ALL THESE FEATURES—Speeds up to 150 packages per minute. Sizes from 2" x 3" up to 8" x 14½" (with 200 cu. in. of product). New plug-in sealing mechanisms for quick change of sealing method. Side-mounted filling tubes and web rolls for easy "threading" and accessibility to moving parts. Practically every type of heat-sealable film, paper, foil or laminate. Quickly adjustable volumetric pocket capacities. Much less floorspace than two single-tube units. Waterproof filling mechanism for steam cleaning and washing down. And all with complete flexibility of operation.



See the new Stokeswrap "1000" in operation at the AMA Packaging Show in Chicago, April 10 to 13, Booths 827-831

Putting Ideas to Work

fmc FOOD MACHINERY AND CHEMICAL CORPORATION

FMC Packaging Machinery Division

Stokes & Smith Plant

4994 SUMMERDALE AVENUE, PHILADELPHIA 24, PA.

People whose business is shipping, packaging, and manufacturing are switching to Ludlow 2-Strip Case Sealing. They've discovered that Ludlow 2-Strip Case Sealing with Snaketape and Glaspun tape ends excess sealing costs, turtle-slow shipping operations, and carton failures enroute!

Here's dramatic proof. Ludlow 2-Strip Case Sealing, in on-the-job tests, out-performed the old-style 6-strip paper tape method with these scores: 278% stronger; 66% less expensive; 66% faster! Ludlow 2-Strip Case Sealing turned in outstanding performance against stapling and glueing as well. Ludlow reinforced tapes should be working for you if they are not already. Get the details. Just fill out the coupon at right and mail it today.

LUDLOW PAPERS
A Division of Ludlow Corporation

LUDLOW PAPERS • DEPT. PE-41
NEEDHAM HEIGHTS 94, MASS.

Please send me full details on Ludlow 2-Strip Case Sealing with Snaketape and Glaspun tape.

Name_____

Title_____

Company_____

City_____ State_____

Ludlow

2-STRIP
REINFORCED TAPE
CASE SEALING

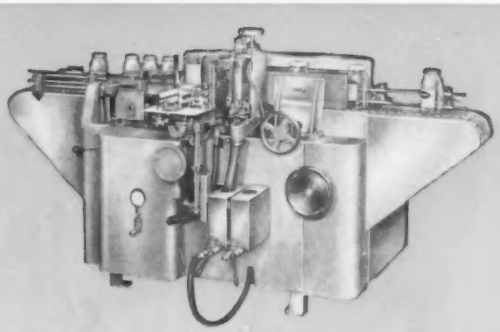
PAY LESS... SAVE MORE WITH PONY LABELERS

...all with exclusive suction label handling

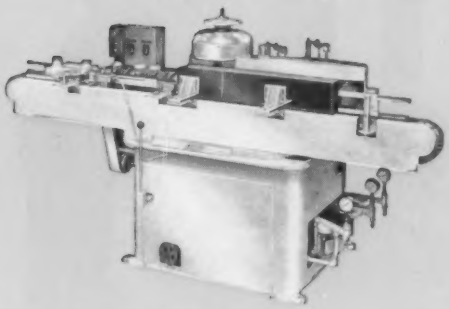
The straight line roll-away bottle handling principle used in these automatic PONY LABELERS makes it possible to offer extra speed at low cost, together with suction label handling to achieve quality labeling!

Each of these Ponies also provides shockless feed-screw bottle metering, line-contact rolling pressure, micro-control circulating glue, and circulating self-cleanup.

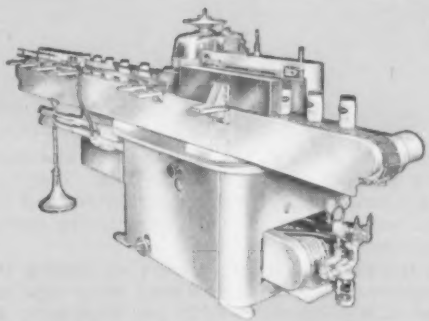
For full information, write for new PONY LABELER BULLETIN



PONY 75: Speed up to 75/min
Label Range: 4½" wide x 5" high, max
⅞" wide x ⅞" high, min



PONY 165: Speed up to 165/min
Label Range: 5½" wide x 5" high, max
1⅛" wide x ¾" high, min



PONY 300: Speed up to 300/min
Label Range: 5½" wide x 5" high, max
1⅛" wide x ¾" high, min

MAKERS OF THE PONY LABELRITE · NJM · NEW JERSEY MACHINE CORP

NEW JERSEY MACHINE CORPORATION
AUTOMATIC LABELING • CARTONING AND PAPER BOX MACHINERY

FACTORY SALES AND SERVICE BRANCHES | 325 W. HURON ST., CHICAGO 10, ILL.
2500 W. 6th ST., LOS ANGELES 57, CALIF.

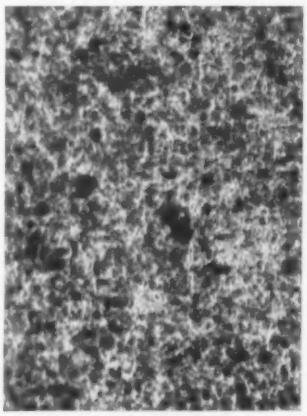
MAIN OFFICE & PLANT • 16th ST. & WILLOW AVENUE, HOBOKEN, N.J.

For more information circle No. 232 on Reader Service Card

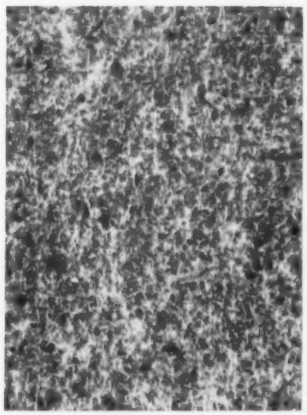
3M COMPANY CHEMICALS

THE RAW MATERIALS OF PROGRESS

Paper Chemical stops carbon "pinhole leaks," assures clean, customer-approved business forms



UNTREATED



TREATED

To keep the pinholes in Thilco* #9 carbon tissue backing sheets from leaking when heated carbon dope is applied, Thilmany Pulp and Paper Co., Kaukauna, Wisconsin, uses 3M Brand Paper Chemical FC-805.

The FC-805 forms invisible fluorocarbon "tails" throughout the paper fibers. This network effectively covers the pinholes (as in picture above, right) and prevents the dope's heated wax and colored oil mixture from flowing through onto the other side of the sheet (as in picture above, left). Thus "one-time" business forms stay cleaner and neater longer . . . produce more uniform carbon copies . . . satisfy customers.

By treating each fiber, rather than applying as a continuous coating, FC-805 gives backing tissues maximum resistance to strike-through without sacrificing strength or flexibility. Tissue sheets can be treated with ordinary wax coating equipment . . . require less carbon dope . . . can be less highly refined.

FC-805 Paper Chemical solves other problems, too. It gives unparalleled resistance to asphalt penetration . . . prevents unnecessary wax penetration on waxed papers . . . permits use of thinner-than-normal poly-coating . . . prevents grease crawl and staining at seams and closures in multi-wall bags . . . permits packaging of greasy and oily parts without penetration.

For more information, see the "profile" column to the right, and send for the free booklet.

*Covered by U.S. Pat. No. 2824815 and Canadian Pat. No. 580-803.

PROPERTIES PROFILE

3M Brand Paper Chemical FC-805

Paper Chemical FC-805 is a water-soluble fluorochemical designed for application on the paper machine. As it dries, a chemical reaction converts it from a water soluble material to a water-resistant, insoluble, non-volatile material that penetrates individual fibers. This imparts grease and oil resistance, a high degree of water repellency, and effectively holds out molten wax, hot asphalt, lacquers and varnishes, without filling the pores of the paper.

OIL RESISTANCE

Type of paper	Oil Resistance (days)			
	Corn Oil	Lard Oil	Peanut Oil	Light Wt. Mineral Oil
30# Bl. kraft, moderately beaten—Flat Treatment Level (wt. %)....0.25	5	4	4	4
30# Bl. kraft, lightly beaten, Creased Treatment Level (wt. %).....0.5	21	14	21	21
15 pt. Semi-Bl. kraft board, Scored & Folded Treatment Level (wt. %).....0.3	5	5	5	10

Since FC-805 achieves grease, oil and wax resistance without the formation of a continuous film, the porosity of paper and board to moisture vapor and other gases is not affected . . . nor will it have an adverse effect upon strength, provided a material such as urea is incorporated in the formulation. In fact, FC-805 will not affect, to any major degree, the color, flexibility, printability, glueability, or porosity of paper.

Free booklet on 3M Brand Paper Chemical FC-805. Send for our booklet on the subject, or write, describing your area of interest to 3M Chemical Division, Department KCA-41, St. Paul 6, Minnesota.

CHEMICAL DIVISION

MINNESOTA MINING AND MANUFACTURING COMPANY

. . . WHERE RESEARCH IS THE KEY TO TOMORROW

3M COMPANY

PLAIN THINGS...FANCY

These widely-assorted items have one thing in common: each travels de luxe in the corrugated safety of a St. Regis® container. It's our job to know a world of different products —and to design just the right containers for shipping them.

And, if you think we have designs on your product—you're right! We make it our business to ask for new opportunities to design boxes that give your product greatest protection at lowest cost. You may need "difficult" boxes . . . boxes with special insulation . . . display shippers . . . boxes with full printing . . . boxes that weather the weather. If the box you need doesn't exist, we'll create and test it. And it will be the sturdiest, safest box your product ever traveled in.

ANYTHING GOES...IN A

For more information circle No. 234 on Reader Service Card

THINGS...BRIGHT THINGS

You can step into this imaginative world of protective packaging at any of our nation-wide plants. Each has a staff of creative design engineers, modern production techniques, and years of experience in virtually any industry you name. Corrugated boxes for plain things, fancy things—*anything*—are designed and made at these St. Regis plants:

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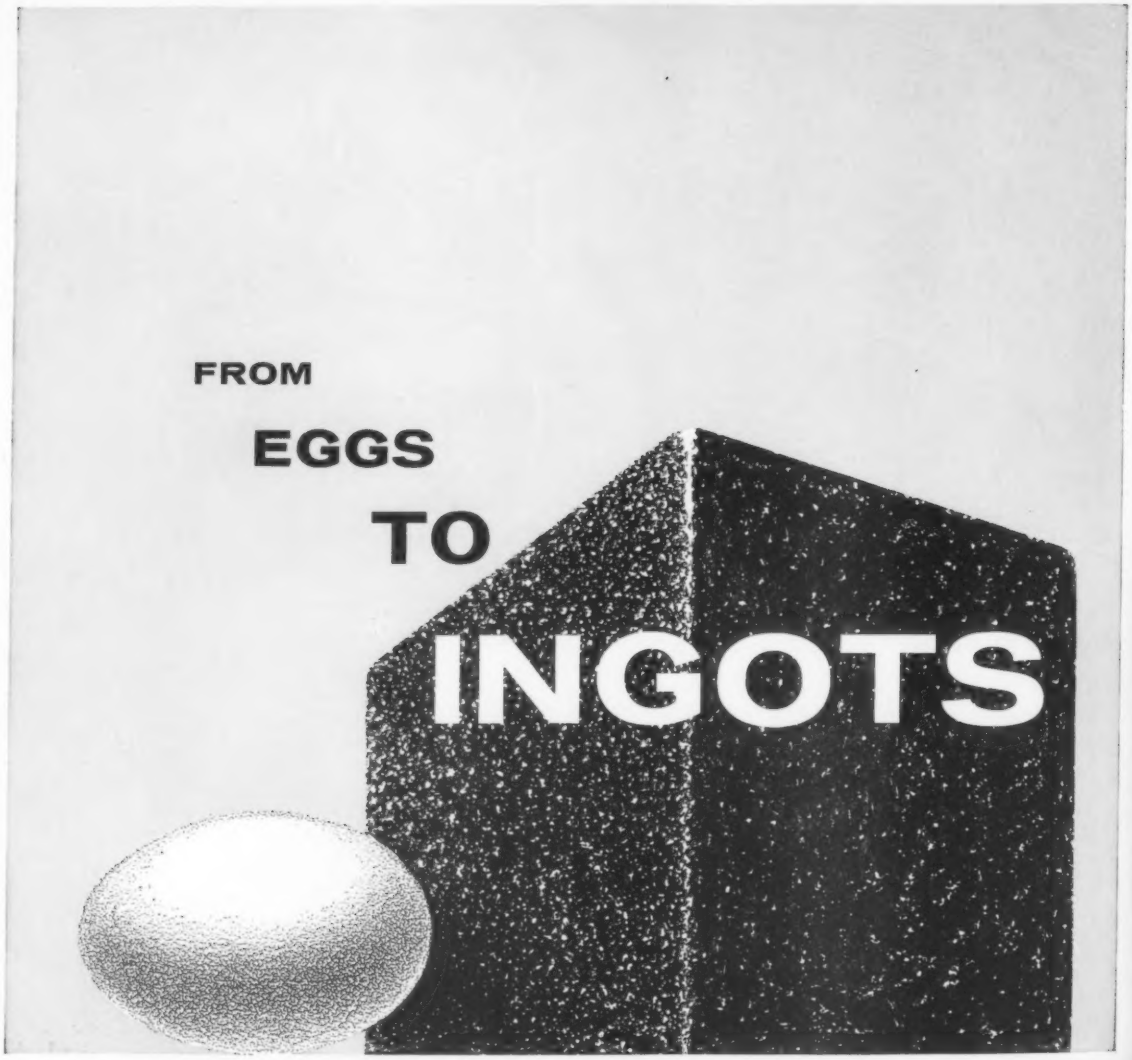

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Multi-colored patterns molded in... won't wear off! Now you can mold high fashion decoration into Beetle® urea plastic containers—and maintain production economy! By incorporating a patterned, resin-impregnated foil during the molding process, you avoid costly after-decoration. The pattern is part of the molded Beetle plastic. It won't chip off, scratch off or wear off. And you still enjoy these practical in-use advantages that have made Beetle an outstanding choice for 25 years: resistance to alcohol, acetone and common solvents; dust repellence, because it doesn't build up electrostatic charges; unlimited selection of colors; moldable in practically any shape. Write for information about new decorated Beetle plastic containers . . . and closures.

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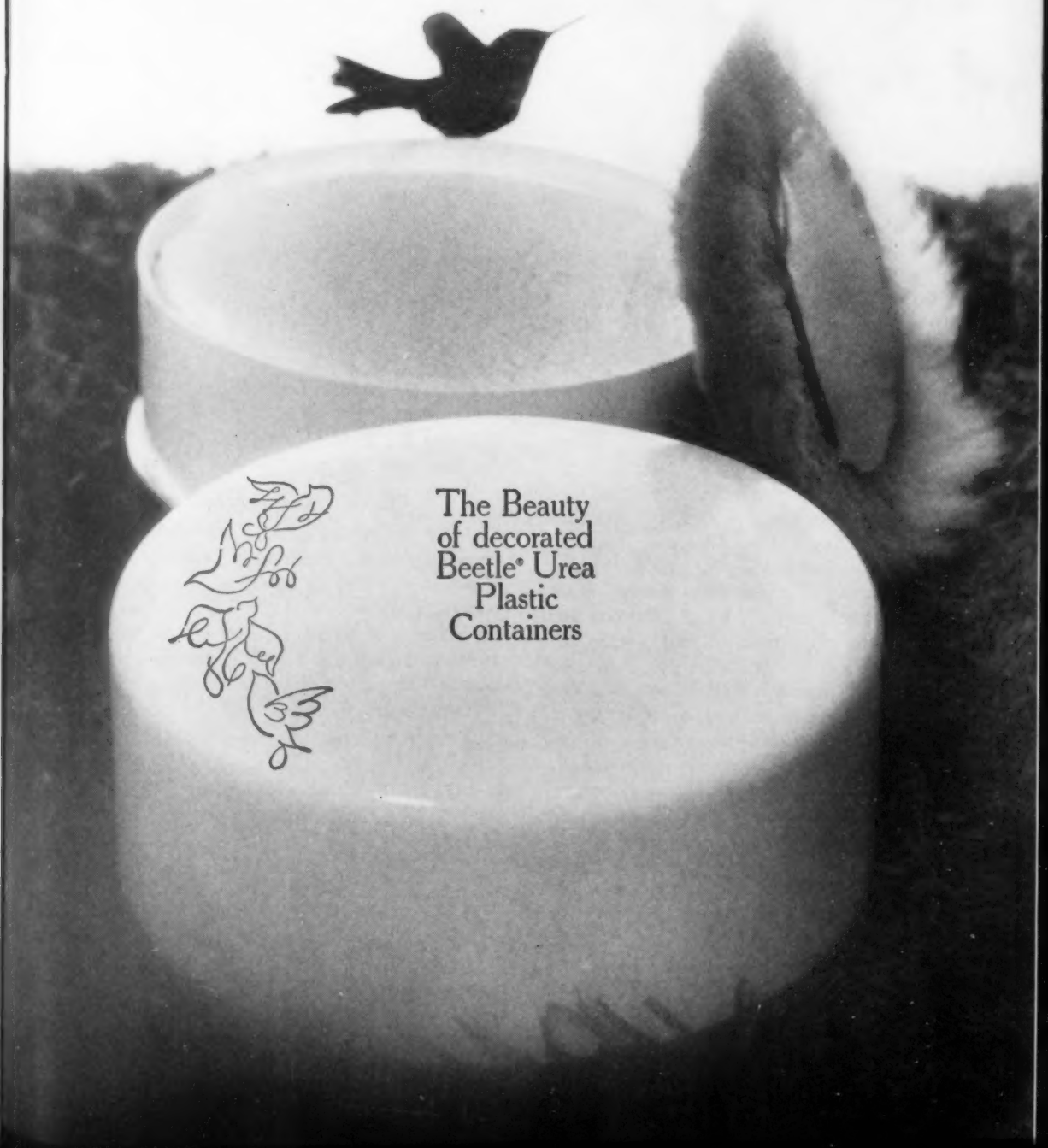

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New Wrap-King CKM-3 Straight Line Wrapping Machine handles ANY Film including Reynolon, Vitafilm, Saran, Cryovac L-500 and XL-500

Shrink films with their soft, limp qualities and crisp, sparkling cellophane are all the same to the new CKM-3 Straight Line Wrapping Machine. Now you can use the *ideal* film for your product . . . the one with the most favorable rate of transmission of moisture and oxygen . . . the one that adds most to the appearance of your product . . . the one that is *most economical* for you. This latest development of Crompton & Knowles *specialized* engineering feeds, wraps and seals them all. And its straight line construction — the longitudinal axes of the discharge and infeed conveyors on one line — makes for simpler, more efficient operation and economical use of space.

The CKM-3 handles film rolls up to 13" wide. It wraps *Rounds:* 3" to 4⅞" in diameter; *Squares:* 3" x 3" to 4½" x 4½"; *Rectangles:* 3" x 3" x ½" to 6" x 4½" x 2½".

CKM-3 is Fast and Adaptable

The CKM-3 wraps 60-80 packages per minute depending on the film used. All controls are in full view on a central panel for easier, more efficient operation. Parts are reached quickly and easily for cleaning or adjusting. Size changes are simple to make. Bunch fold parts can be provided for all plastic films. Modified die fold parts are available for most films.

For complete details on the new CKM-3 Straight Line Wrapping Machine, including leasing arrangements, write Wrap-King Division, Crompton & Knowles Packaging Corporation, Holyoke, Mass.

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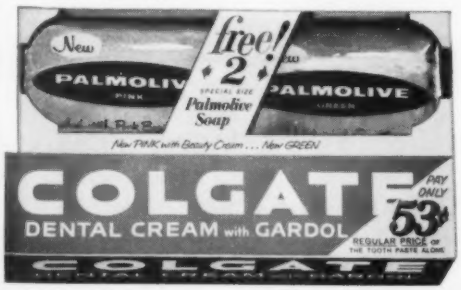
Resilo-Pak saves Colgate 30% on filler costs

First-time use of Resilo-Pak helped Colgate develop successful package.



Specifications on Colgate-Palmolive Company's new combination offer display package called for a filler material in close thickness tolerances. Requirements were $^{15}/_{32}$" for the economy size, $^{9}/_{32}$". for the giant size, with a tolerance of plus or minus $^{1}/_{32}$". Because Armstrong Resilo-Pak can be economically fabricated to accurate dimensions, the use of this resilient foamed plastic saved Colgate 30% to 50% compared with conventional fillers which would have required special production runs to meet the specified thicknesses.

In addition to reducing costs, Resilo-Pak was easy to insert smoothly behind the soap bars and held them firmly against the front of the package. Its resilience meant no sharp edges or corners to tear wrappers. The light weight and clean white appearance of Resilo-Pak also were factors leading to its selection.

Armstrong Resilo-Pak meets a wide variety of packaging requirements. It absorbs more energy per dollar than any package cushioning available, its thermal conductivity is low, it is odorless, non-dusting, non-corrosive, and non-abrasive. Resilo-Pak meets all requirements of Interim Fed. Spec. PPP-00850 (GSA-FSS).

Resilo-Pak may cut your packaging costs by reducing the amount and cost of cushioning, the size and cost of the package, or the expense of packing, shipping, and warehousing. For free Resilo-Pak booklet, write to Armstrong Cork Company, 3104 Pearl Street, Lancaster, Pennsylvania.

Armstrong RESILO-PAK

PACKAGING

For Insured Protection of Flavor and Freshness . . . seal contents in Thilco POLY-KRAFT Pouch Papers.

Insert in attractive shelf-display cartons. Serves millions of satisfied customers with repeat helpings.

One Protective Ingredient Important to All!

Vital to protecting the savory flavor and freshness of these popular food products in Thilco's versatile, heat sealable POLY-KRAFT Pouch Papers — the packaging ingredient that safeguards products from M.V.T. deterioration by sealing moisture-vapor *in* or *out* where you want it!

Like many *foods* of distinctive flavor and quality, Thilco POLY-KRAFT is not a single, ordinary compound, but a blend of special treated ingredient papers combined with poly, foil, cellophane, glassine and other papers or materials to best fulfill the most individual protective appetities your products may hunger for.

Thilco POLY-KRAFT is available in lightweight blends for automatic Pouch Packaging, box liners and bags, or, in heavyweight blends for bulk packaging and carton overwraps. Furnished in rolls for automatic forming/filling machines — in cut size sheets—or in ready-made paste, glue or heat-sealable bags.

For one of the lowest cost, *unexcelled* M.V.T. protective packaging ingredient you can buy, consult with us for name of the Thilco POLY-KRAFT representative best located to serve you.

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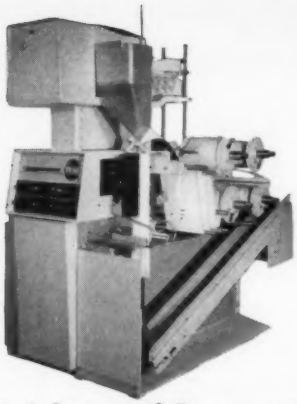

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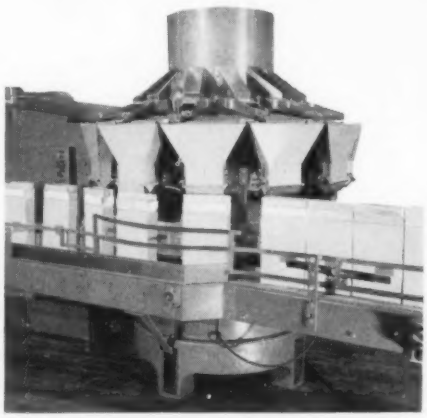

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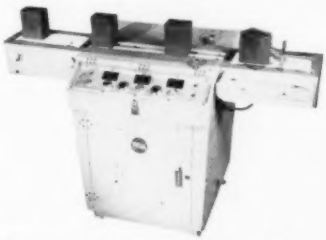
A completely automatic rotary net weigher for high speed packaging in containers the total output of a continuous process.

M-2 Hy-Tra-Lec® Weigher *with New Speed Fill Turret*

A Semi-Automatic System to precision weigh a wide variety of products into bags, boxes, jars, or cans. The new Speed Fill Turret allows greater ease and speed for attendant.



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100% checkweighs articles in motion at high speeds with extreme accuracy. The unit can be used to reject packages over and under acceptable weights. Counters provide total production tally of over, under, and correct weights.

Wright Machinery Company has a complete line of weighing and filling equipment for free-flowing, hard to handle products for manufacturers packaging ½ ounce to 16 ounces. Wright engineers will adapt the recommended machine or system to suit your requirements. Speed, accuracy, and gentle product handling are features included in all equipment. For information on how Wright can solve your packaging problems, write us on your letterhead; for detailed information on above machines, just fill out the attached coupon.

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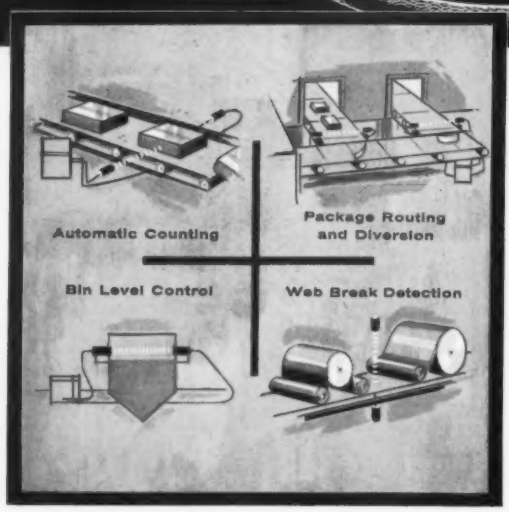

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NON-CONTACT SENSING AND SWITCHING SYSTEM

Before Sonac, sensing and switching control systems which involved breaking a beam of energy were limited by vibration, dust, smoke, steam, air contamination and too much or too little light. Sonac's ultrasonic energy "beam" is completely free of these limitations. The acoustic lens on Sonac sensors can actually be painted without affecting performance. Utilizing high frequency sound also means there are no lamps to burn out. Savings in replacement parts and maintenance time often means Sonac pays for itself. Sonac is completely transistorized, providing you with a rugged, dependable electronic circuit.

These are just a few of Sonac's many uses. Optional equipment includes reflectors for precision beam and positioning control, and coupler assemblies for use with flexible tubing for remote sensor locations. This descriptive booklet will be sent to you on request.

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Creative Climate for Tomorrow's Packaging

Developed by Riegel with Standard Brands . . . this attractive, protective pouch is paper/poly/foil/vinyl . . . gravure printed and high gloss coated. Its production economies clear the way for wider promotion and distribution of the product.

Whether you need this kind of eye-striking sales appeal . . . or the last word in protection . . . or simply economy . . . Riegel can help you.

On the following pages you will see more examples of creative packaging by Riegel.

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Creative Packaging . . . tailor-made to your needs

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Specialist in the packaging of foods, drugs, and soft goods

Flexible packaging . . . carton board . . . folding cartons . . . carton liners

Riegel carton liners protect the crisp goodness in Kellogg's cereals

Riegel, a volume producer of carton liner material, tailors its papers to meet Kellogg's specific protection needs.

Customer loyalty is a valuable asset . . . and the people who guide Kellogg's protect theirs carefully. One custodian of this loyalty is the special Riegel carton liner that maintains the crisp goodness of Kellogg's cereals.

We've a flair for thinking of your product as something special, too, and developing for it the one best answer, be it pouch paper, glassine, foil, film, or combination . . . printed, coated or plain. Write for more information today . . . for the new ideas come from Riegel.

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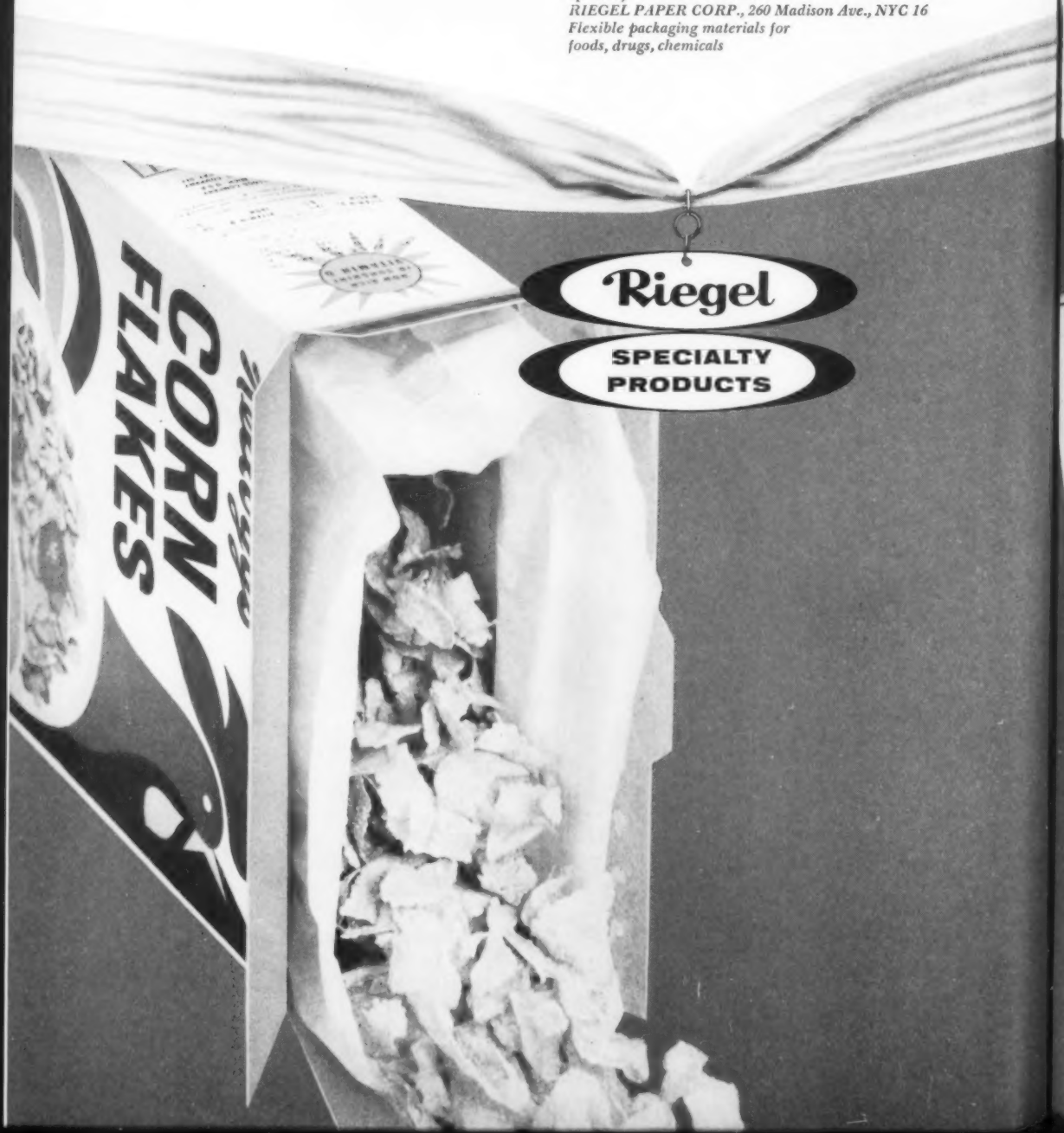
Flexible packaging materials for foods, drugs, chemicals



A sales building idea for Brown's Hosiery Mills from Lassiter...the soft goods specialist

New "Poodle Set" package shows Lassiter carton design skill at work . . . 3 related children's items book-packaged to promote higher unit sales.

Group packaging to promote higher unit sales is a problem that Lassiter has solved many times over. As the leading specialist in soft goods packaging, we understand both sales and production problems . . . and we know how to create a package that will catch the eye, promote sales, and maintain production efficiency.

This kind of *practical* creative packaging . . . choosing from a wide variety of materials . . . can help you. May we lay the world of design at your feet? Write today.

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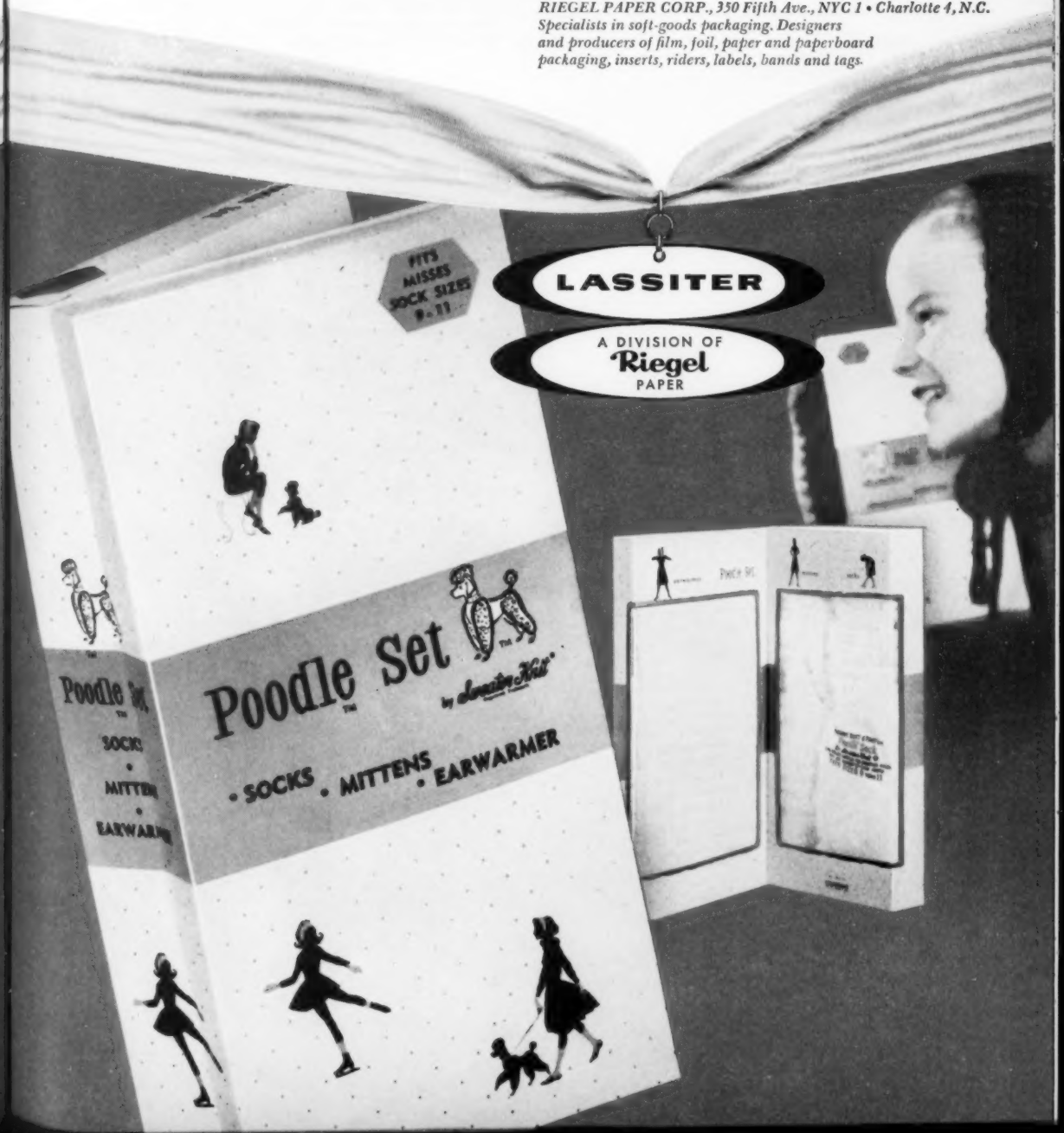
Specialists in soft-goods packaging. Designers and producers of film, foil, paper and paperboard packaging, inserts, riders, labels, bands and tags.



Riegel Foldcote: So strong it saves the cost of metal cutter

The Foldcote carton board itself is the cutting edge in this Tidy Home aluminum foil package. Offset printed in two colors.

For noticeably stronger, brighter cartons . . . Tidy House Paper Corporation of New York uses Riegel's outstanding new carton stock . . . Foldcote™. Super-white for color brilliance, super-smooth for high-fidelity reproduction . . . super-strong for a rugged, rigid package that keeps that *clean* look.

You too can have a brighter future with Foldcote. Ask for samples and information. Ask too, about other Carolina solid bleached boards. Export inquiries also invited. See Riegel . . . for the new ideas come from Riegel.

Carolina Division
RIEGEL PAPER CORP., 260 Madison Ave., NYC 16
"Foldcote" machine-coated bleached board
"Albacel" and "Astracel" pulps

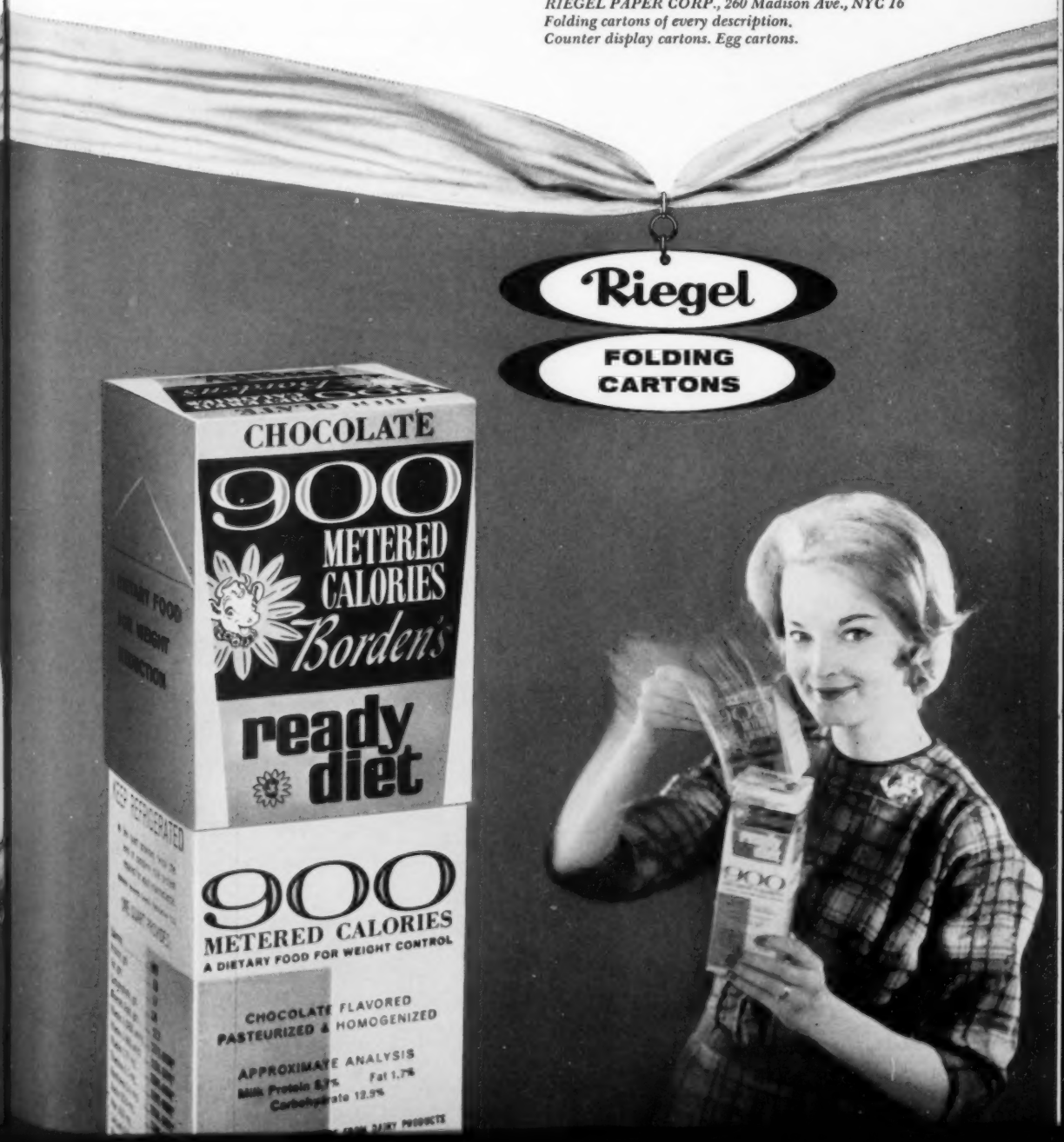
Distinction for Borden's: a new "golden look" with a Riegel carton top

Slip-on carton "hood" . . . gravure printed in gold on Riegel Foldcote™. Hood fits both steeple and flat-top containers . . . holds instruction folder.

This sparkling gold hood creates the right atmosphere for acceptance . . . gives quick identity to Borden's fast selling Ready Diet. Die-cut side panels lock snugly over standard steeple or flat-top containers, hood holds an instruction folder.

This same sales-ahead folding carton service is ready to help you. Riegel's modern carton plants . . . North and South . . . offer design services and full choice of printing processes, coatings and finishes. A brief talk will fill you in. Just say when.

Folding Carton Sales
RIEGEL PAPER CORP., 260 Madison Ave., NYC 16
Folding cartons of every description.
Counter display cartons. Egg cartons.



"A better package, at lower cost" ...why Smith-Gates likes Riegel Skin-Pak system

"We have found that by use of your machine we not only lead all competitors in product presentation but also have improved our factory costs and reduced packaging time."

Moving to the front with new self-selling hardware techniques, Smith-Gates Corp. chose Riegel Drapex™, a new super-strong vacuumizing film, teamed with Riegel Skin-Pak automatic machines. Result: leadership.

Drapex is glossier, longer lasting, more puncture resistant . . . so strong you use a thinner film, with big savings in heating time and material cost. Seals directly to uncoated, unperforated board.

Try Riegel Drapex. Send your product *today* for free test packaging . . . for the new ideas come from Riegel.

Skin-Pak
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"Drapex" film and machinery for skin packaging

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You are cordially invited to see the newest ideas in automatic packaging equipment. Bartelt Engineering Company will be unveiling entirely new concepts in flexible packaging.

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Millions of picnics in corrugated

Broil the burgers. Break out the beer. America's picnic basket overflows with good things to eat. Tons of summertime snacks are shipped in corrugated boxes by Hinde & Dauch Division. Sturdy, lightweight boxes—planned for shipping economy. Leading food producers regard H&D as their primary source for money-saving *corrugated boxes in volume.*

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Will this study help clear up the controversy surrounding the Mullen test?

Should a specific clamping pressure be incorporated into the standard method of testing?

The Mullen Test — clamping pressure does affect it

Tests show that you can make poor corrugated pass or make good board fail— in spite of Rule 41's provisions

By Glenn W. Casey,
Quality Control Supervisor,
The R. T. French Company,
Souderton, Pennsylvania

The packaging engineer performing a Mullen test on corrugated board encounters an absence of specific rules governing the amount of clamping pressure of the plate above the diaphragm to the board. He can make poor board pass and, conversely, make good board fail, simply by varying the application of clamping pressure.

In one instance, three qualified technicians from different companies tested the same lot of board. One technician failed 32 punctures out of 90, another failed 51 out of 90, and the other failed none.

Discounting such natural variations as may be found in one lot, we decided that such radical differences hardly can be accepted as normal, and found them to be mainly in the "feel" of the clamping wheel. Yet, in spite of all this, we must conform to regulations or suffer a potential rate penalty.

Results Not Reproducible

Section 2, Note 1, (C) of Rule 41 of the *Uniform Freight Classification* reads as follows:

"In applying Cady or Mullen test, the plate above the diaphragm must be firmly clamped down on the board to prevent slipping. If the board slips during the test, the results must be disregarded."

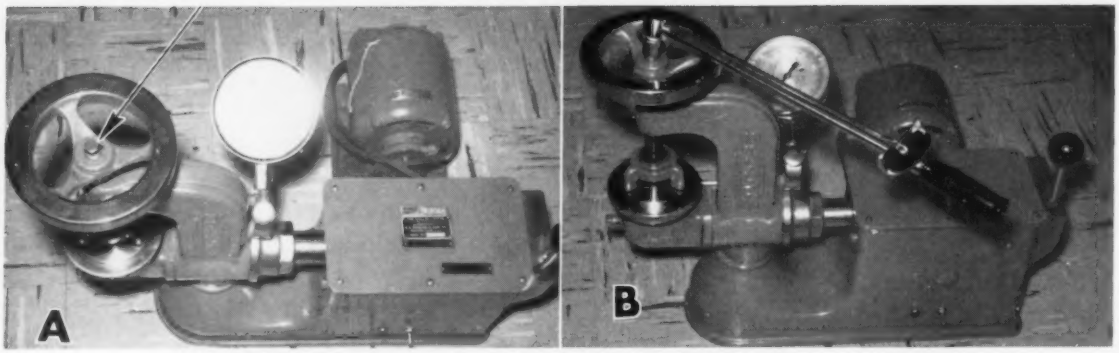
The fact that the regulation does not define "firmly" makes the procedure for testing somewhat vague —just how firm is firmly? Consequently, the test yields results

CONCLUSIONS:

- ► As clamping pressure increases, average test results decrease, per cent of punctures falling below certification increases.
- ► A torque of 5 ft.-lb. on the clamping wheel provides satisfactory pressure and allows reproducible results.

RECOMMENDATION:

- ► That the standard Mullen test method be revised to include using a torque of 5 ft.-lb. on the clamping wheel.



1 MODIFIED MULLEN TESTER. Shaft of clamping wheel was drilled and tapped to accommodate bolt (arrow in A) onto which torque wrench is applied. Considering friction of clamp-screw thread as constant, wrench (B) is used to achieve pressure in terms of foot-pounds of torque on clamping wheel.

which are most difficult, if not impossible, to reproduce.

The Mullen Controversy

For quite a number of years, there has been much controversial talk about the Mullen test—mainly that its results are not always reproducible. Because there is no means on the testing machines to apply clamping pressure accurately, we believe that variations in pressure, as used by different technicians, are the major cause of erratic results.

We also feel that these erratic results are the basis for some technicians to favor the Beach or GE puncture test as a substitute for Mullen. However, we believe it is well recognized by those interested in testing corrugated board that the Beach test cannot be used as a post-mortem test—and frequently, for investigative purposes, it is necessary to conduct a post mortem on a corrugated shipping container.

Another point in disfavor of the Beach test at the present time is that the carriers do not recognize it as a criterion.

Modified Mullen Tester

In view of all these facts, we set up a test program to evaluate definite clamping pressures. By using a torque wrench and considering friction of the clamp-screw thread of the testing machine as a constant, we can apply a given pressure to the corrugated board sample—a pressure in terms of foot-pounds of torque on the clamping wheel.

To allow using a torque wrench for this purpose, we modified our Mullen tester by drilling and tapping the shaft of the clamping wheel to accommodate a bolt onto which the torque wrench is applied. (See Fig. 1A.)

In using the modified tester, we insert a sample between the diaphragm and the pressure plate, and turn down the clamping wheel by hand until it just stops—practically no pressure on the board. Applying the torque wrench, we then tighten the plate to the desired pressure in terms of foot-pounds of torque. (See Fig. 1B.)

TEST PLAN

We conducted tests on the following types of printed, corrugated board, fabricated into shipping containers:

200-lb.-test, A-flute
200-lb.-test, B-flute
200-lb.-test, C-flute
175-lb.-test, A-flute
175-lb.-test, B-flute
175-lb.-test, C-flute
125-lb.-test, A-flute
125-lb.-test, B-flute
125-lb.-test, C-flute

The board tested represents six different suppliers.

Use Six Pressures

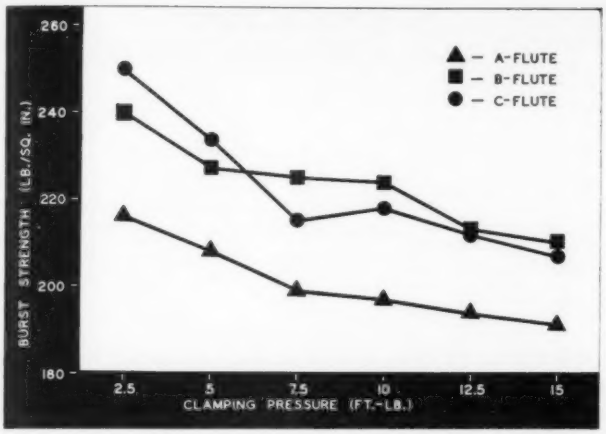
For each lot tested, we determined burst strength at each of the following pressures: 2½, 5, 7½, 10, 12½, and 15 ft.-lb.

Most of the lots tested were 200-lb.-test, A- and C-flute, and 175-lb.-test, C-flute boards, since we use these types for most of our products. However, so as to have a more complete picture of clamping pressure, we obtained from various suppliers many lots of shipping containers made of the other types of board listed above.

We tested over 35 lots of board. On each lot, 40 to 42 punctures were made at *each* of the 6 pressures. To date, a total of over 7,500 punctures have been made for the 9 different types of board. All punctures were made through printed areas and from the outside to the inside surface of the container board.

(Tables I, II and III and Figs. 1, 2 and 3 appear on the following three pages. Text continues on Page 64.)

Glenn W. Casey is a graduate of Temple University, and is presently taking courses in statistics, probability, and statistical quality control at Philadelphia College of Textiles and Sciences. Before joining R. T. French Company in 1946, he worked in the control laboratory of Babcock and Wilcox Tube Company. At French he has been department head of production, and methods and standards, and is now head of quality control. Mr. Casey is chairman of the Lansdale Section of American Society for Quality Control.



2 200-LB.-TEST CORRUGATED BOARD

Clamping pressure affects burst-strength test results of corrugated board—curves show that burst strength *decreases* as pressure increases, regardless of flute. Note: Biggest drop is from 2½ to 7½ ft.-lb. of torque on clamping wheel of Mullen tester. Tests on 175- and 125-lb.-test board show same trend (see Figs. 3 and 4). (Curves are from data in Table I below.)

TABLE I

Mullen Test Results Of 200-Lb.-Test Corrugated Board Tested Under Various Clamping Pressures

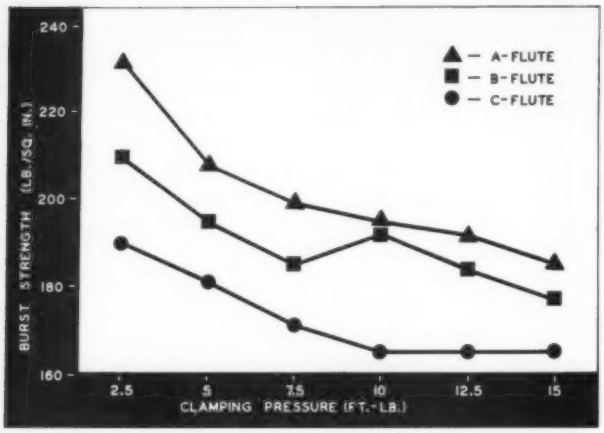
Burst Strength (lb./sq. in.)

Sample Number	A-Flute						B-Flute						C-Flute					
	Clamping Pressures (ft.-lb.)*						Clamping Pressures (ft.-lb.)*						Clamping Pressures (ft.-lb.)*					
	2½	5	7½	10	12½	15	2½	5	7½	10	12½	15	2½	5	7½	10	12½	15
1	210	227	197	200	200	177	230[d]	193[d]	269	238	234	226	215	258	253	227	219	235[d]
2	209	217	222	202	195	187	203[d]	236[d]	206	245	236	238	267	238	200	211	136[d]	132
3	209	195	197	189	202	209	176[d]	180[d]	196	207	192	205	273	245	210[d]	237	215	206
4	234	213	213	199	202	181	204	307	263	212	187	201	250	225	226	227	200	210[d]
5	227	195	219	211	168	192	205[d]	188[d]	258	205	241	196	245	233	229	226	203	220
6	236[s]	216	222	188	216	202	248	198[d]	198	213	211	187[d]	266	247	231	201	207	220
7	219	200	210	218	193	174	230	201[d]	256	204	214	225	261	226	196	234	201	213
8	211	214	182	203	178	193	288	210[d]	234	247	240	218	284[s]	243	242	227	223	188[d]
9	187	190	199	202	200	200	217[d]	276	176[d]	201	228	219	273	239	207[d]	238	214	227
10	182[d]	197	203	193	201	167	233	243	208	238	213	226	262	227	216	199[d]	210[d]	201[d]
11	225[s]	219	202	203	198	183	271	254	228	214	203	228	233	259	210	200[d]	253	233
12	221	217	198	194	185	187	202[d]	216[d]	290	244	213	226	263	238	201	243	213	177
13	214	197	200	220	217	180	211[d]	239	185	220	203	224	246	247	233	234	241	230
14	212	202	204	181	212	200	226	212	250	232	233	209	264	239	200[d]	197	230	211
15	181	189	205	214	201	196	245	226	228	234	217	206	245	230	221	198	238	187
16	233	207	177	215	194	174	198[d]	233	207	232	210	208	251	243	235	235	233	209
17	239	211	196	198	188	194	201[d]	278	246	219	220	213	272	200[d]	226	211	198	227
18	251	224	216	181	181	205	189[d]	191[d]	246	257	212	214	219	203	223	223	225	214[d]
19	223	217	199	209	207	188	289	191[d]	230	232	226	207	213	217	215	217	212	187[d]
20	217	206	217	204	208	194	241	179[d]	203	236	234	193	190[d]	195	213	175[d]	216	197
21	244[s]	220	192	187	174	189	266	232	196	210	197	202	207	210	205	230	193	179
22	227	228	211	196	212	196	202	227	232	217	232	197	260[s]	208	198	204	187	200
23	212	222	203	199	194	198	267	218	204	193	195	182	222	186[d]	210	216	188	180
24	235	215	215	175[d]	192	213	178[d]	243	230	190	220	176	233	202	178	190	186	176
25	206	210	168	204	175	201	270	206	202	218	216	209	256	258	224	220	220	208
26	233	206	182	176	173	180	230	205	219	254	244	248	238	241	206	234	213[d]	225
27	204	209	173	170	201	197	268	284	272	216	206	210	244	275	218	195[d]	234	231
28	209	172	207	183	195	174	226	191	208	246	192	196	262	231	193	220	205	210
29	215	180	178[d]	188	181	182	266	230	235	214	228	198	235	213	229	201	214[d]	203
30	200	205	204	199	207	189	278	228	226	217	184	217	259	218	205	215	207	220
31	217	214	199	197	183	197	212	252	214	218	206	172	241	233	226	197	203[d]	133[d]
32	210	207	187	184	211	193	294	234	222	240	208	228	267	238	211	229	206	227
33	235[s]	229	175	211	188	195	284	200	216	244	218	219	276	235	203	216	183	215
34	214	210	217	207	196	200	253	222	246	207	196	206	266	255	180	209[d]	233	220[d]
35	222	203	198	189	177	204	225	236	220	212	182	210	273	269	219	231	222	219
36	215	202	173	214	174	195	268	270	218	218	196	206	271	231	235	230	193[d]	178[d]
37	244	186	194	211	203	194	256	210	219	220	200	242	243	224	223	221	205	226
38	227	208	199	181	198	183	287	252	206	234	192[d]	184	274	263	233	199	203	211
39	269[s]	213	200	195	180	194	290	293	246	232	231	237	259	277	209	231	206[d]	242
40	192	207	209	180	201	188	266	202[d]	208	231	216	200	257	243	234	225	240	223
41													280[s]	241	207[d]	249	221	222
42													263	237	215[d]	249	234	216

Recapitulation

Burst strength†	Total	7561	8299	7962	7870	7761	7645	9593	9086	9016	8961	8526	8408	9754	9840	9048	9171	8883	8688
	Average	216	208	199	197	194	191	240	227	225	224	213	210	250	234	215	218	212	207
Total punctures†		35	40	40	40	40	40	40	40	40	40	40	40	39	42	42	42	42	42
Punctures failing†	No.	4	9	20	23	23	31	4	8	5	2	10	10	1	2	5	8	8	11
	%	11.4	22.5	50.0	57.5	57.5	77.5	10.0	20.0	12.5	5.0	25.0	25.0	2.6	4.8	11.9	19.0	19.0	26.2

* Torque on clamping wheel.
† Does not include slips, but includes double pops.
d Indicates double pop.
s Indicates sample slipped.



3 175-LB.-TEST CORRUGATED BOARD

Curves are similar to, and show same trend as, those for 200- and 125-lb.-test board (see Figs. 2 and 4). Comparing data in Tables I, II and III with Figs. 2, 3 and 4, respectively, shows that pressure apparently is not factor in causing "double pops," regardless of flute. (Curves are from data in Table II below.)

TABLE II

Mullen Test Results Of 175-Lb.-Test Corrugated Board Tested Under Various Clamping Pressures

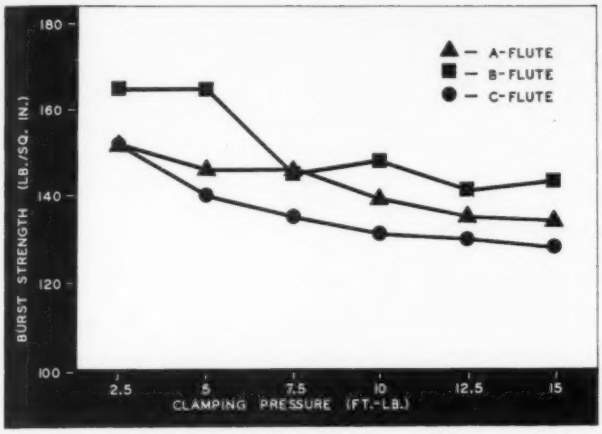
Burst Strength (lb./sq. in.)

Sample Number	A-Flute						B-Flute						C-Flute					
	Clamping Pressures (ft.-lb.)*						Clamping Pressures (ft.-lb.)*						Clamping Pressures (ft.-lb.)*					
	2½	5	7½	10	12½	15	2½	5	7½	10	12½	15	2½	5	7½	10	12½	15
1	228	210	205	197	186	189	171[d]	207	204	240	172	175	230	183	177	174	161	163[d]
2	255	217	226	209	179	185	198	231	219	184	183	194	215	168	147[d]	165	172	166
3	227	227	202	148	173	187	237	210	184[d]	180	156	173	203	184	195	175	147	156
4	205	217	173	202	203	158	235	191	183	214	218	185	190	187	176	171	189	173
5	245	209	193	219	181	171	223	200	182	209	164	215	173[d]	165	187	167	147	172
6	220	201	204	211	175	193	193	187	190	193	177	175	189	172[d]	181	174	159	161
7	221	198	167	204	217	174	194	196	199	205	191	146	190	196	173	160	171	153
8	211	160	197	184	161	195	226	211	181	207	203	197	174[d]	165[d]	180	175	161	172
9	218	226	175	215	225	202	244	196	216	214	201	167[d]	195	181	172	167	163	175
10	246	194	192	154[d]	181	200	227	224	204	230	199	200	173	184	164	176	151	167
11	219	172	195	186	207	178	218	219	217	202	197	151[d]	178	176	165	143[d]	147	160
12	206	198	171	186	173	184	188	206	233	213	176	170	180	193	173	167[d]	161	151
13	278	194	212	185	202	176	224	215	189	174	213	179	187	183	147	162	160	155
14	172[d]	207	181	213	229	186	243	166	215	172	201	186	178	180	170	167	174	171
15	228	195	188	202	183	173	178[d]	228	187	195	213	203	163	178	175	164	148	167
16	196	192	198	166	206	193	207	201	208	193	171	195	176	179	177	147	151	149
17	236	199	222	189	203	183	213	228	198	202	209	189	194	186	150	185	138[d]	170
18	241	202	209	213	181	188	246	216	201	201	197	187	177	175	179[d]	163	156	153
19	242	192	199	198	168	172	191	193	172	172	194	162	190	188	160	175	160	151
20	240	225	181	210	150	155	213	204	145	180	176	128	176	178	163	138[d]	163	142
21	256	195	181	237	189	197	209	159	139[d]	181	171	185	150	177	163	165	140	155[d]
22	220	199	210	194	201	197	184	183	165	195	167	168	221	166	170	181	170	176
23	269	220	222	192	157	183	185	173	186	189	179	162[d]	185	188	213	169	159	153
24	231	232	228	188	192	190	205	152	154	180	197	197	202	175	178	148	172	173
25	255[s]	222	212	181	189	202	210	205	166	167	179[d]	166	180	172	170	168	180	182
26	218	200	204	179	198	196	253	229	168	186	197	185	213	202	154	173	153	169
27	230	187	189	199	189	187	241	217	209	211	193	213	202	188	142	153	182	173
28	214	228	212	199	214	189	229	215	219	202	182	165	193	179[d]	174	182	176	178
29	230	201	196	180	162	174	214	194	179	176	210	183	225	192	158	162	184	168
30	286	242	216	204	180	202	189	199	198	197	174	182	199	200	157	169	187	172
31	273[s]	230	197	198	195	194	199	199	159	205	174	170	225	196	203	158	179	168
32	274[s]	159[d]	172	186	182	202	213	154	181	186	170	161	203	173	145	152[d]	177	176
33	246	232	191	189	190	168	173	174	165	154	181	171	207	172	193	163	165	164
34	256	226	195	199	185	180	183[d]	192	170	184	182	181	200	173	165[d]	145	178	175
35	191	173	223	186	214	172	183	178	182	183	175	161	184	168	175	166	149	157[d]
36	248[s]	274	206	176	220	185	205	195	163	153	174	150	202	188	173[d]	168	196	176
37	279[s]	218	219	174	182	174	206	196	220	209	148	202	181	185	175[d]	156	182	182
38	297[s]	226	205	207	236	206	192	158	160	196	175[d]	164	167	185	153	178	148	155
39	250	228	223	195	206	159	241	183	150	154	170	191	164	187	194	161	172[d]	167
40	256	198	186[d]	226	221	199	227	149	177	175	168	164	185	193	183	157[d]	158[d]	170
41							202	169	161	194	168	146	140	172	171	162	183	162
42							200	194	163	174	166	192	201	179	152	160	161	155

Recapitulation

Burst strength†	Total	7887	8325	7977	7780	7685	7398	8812	8196	7761	8031	7711	7436	7960	7611	7172	6911	6930	6933
	Average	232	208	199	195	192	185	210	195	185	192	184	177	190	181	171	165	165	165
Total punctures†		34	40	40	40	40	40	42	42	42	42	42	42	42	42	42	42	42	42
Punctures failing†	No.	1	4	4	4	7	11	2	9	15	8	15	19	8	11	25	34	30	34
	%	2.9	10.0	10.0	10.0	17.5	27.5	4.8	21.4	35.8	19.4	35.8	45.3	19.0	26.2	59.5	81.0	71.4	81.0

* Torque on clamping wheel.
† Does not include slips, but includes double pops.
d Indicates double pop.
s Indicates sample slipped.



4 125-LB.-TEST CORRUGATED BOARD

Minimum clamping pressure for testing burst strength of corrugated board appears to be 5 ft.-lb. of torque on clamping wheel, as some "slips" occurred at 2½ ft.-lb., but none occurred at 5 ft.-lb. or higher, regardless of flute. This was true for 200- and 175-lb.-test board (see Figs. 2 and 3). French is revising its box specs to show its incoming-quality-control Mullen test uses minimum clamping pressure of 5 ft.-lb. (Curves are from data in Table III below.)

TABLE III

Mullen Test Results Of 125-Lb.-Test Corrugated Board Tested Under Various Clamping Pressures

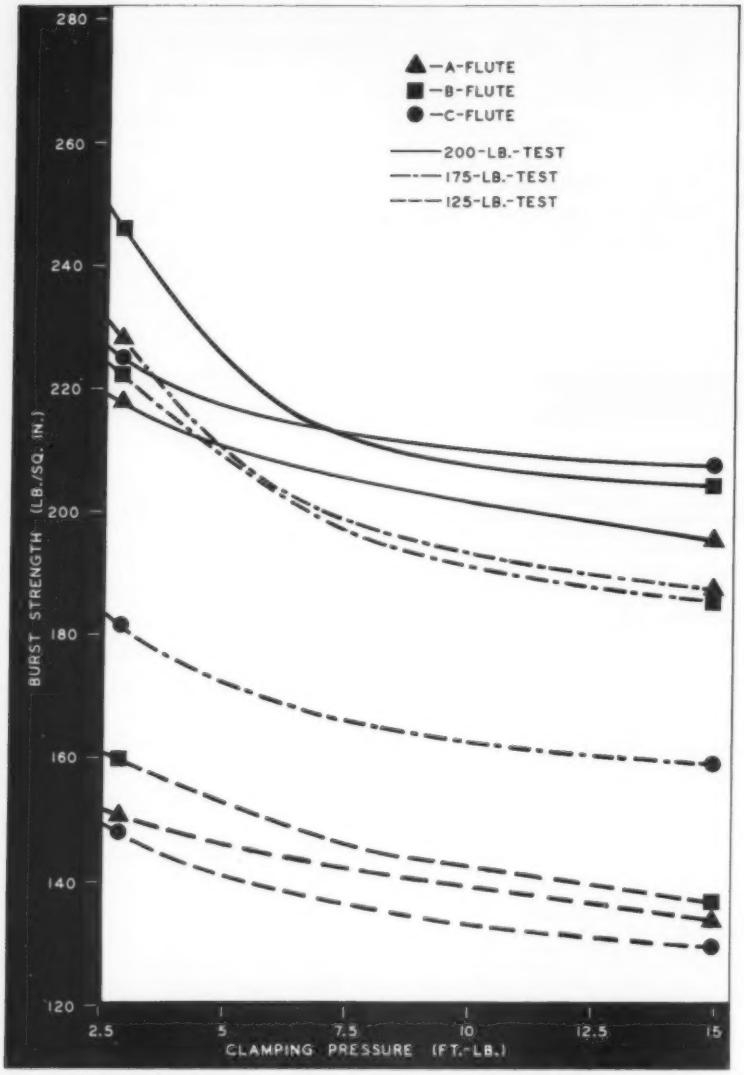
Burst Strength (lb./sq. in.)

Sample Number	A-Flute						B-Flute						C-Flute					
	Clamping Pressures (ft.-lb.)*						Clamping Pressures (ft.-lb.)*						Clamping Pressures (ft.-lb.)*					
	2½	5	7½	10	12½	15	2½	5	7½	10	12	15	2½	5	7½	10	12½	15
1	130	143	170	115	142	150	171	182	123[d]	137	114[d]	121	155[d]	137[d]	143	130	134	145
2	180	167	118	130	138	135	134	164	145	153	151	130	132[d]	144[d]	154	149	138	147
3	140	120	134	122	126	121	180	168	161	140	152	149	107[d]	106[d]	111	121	121	118
4	173	120	159	138	120	108	167	150	157	123	144	153	137	130	153	131	132	126
5	149	151	160	164	112[d]	128	140	145	169	136	149	121	149	117	127	123	113	103
6	130	131	172	150	146	120[d]	135[d]	174	156	145	130	125[d]	138	130	98[d]	154	145	107
7	130	138	114[d]	124	156	109[d]	153	160	122[d]	150	133[d]	118	171	137	112[d]	133	105[d]	138
8	135	170	142	149	133	123[d]	191	178	118	160	130	155	164	117[d]	124	125	124	109
9	168	121	154	149	137	104[d]	193	174	150	136	116	149	141	157	125	152	113	119
10	140	130	141	164	150	138	163	181	157	135	158	151	146	107	108	121	132	111
11	190	125	128	125[d]	161	129	162	135	136	146	170	153	162	127	136	131	135	110[d]
12	161	154	115[d]	112[d]	118[d]	142	160	164	148	153	141	150	136	140	135	123[d]	138	125
13	155	157	149	167	150	160	165	182	169	151	156	138	172	143	136	131[d]	143	115
14	167	173	164	154	149	151	168	184	139	150	150	124[d]	135[d]	135	142	134	125	110
15	136	143	163	161	156	150	161	172	128	159	115[d]	146	133	146	133	145	140	121
16	143	164	153	130	151	127	181	180	151	151	145	141	169	167	115[d]	150	125	135
17	147	128	160	145	144	147	179	161	113[d]	153	139	155	198	116[d]	138	110	122	136
18	160	140	167	112[d]	120	161	177	165	147	132	123[d]	150	157	121	133	136	120	132
19	164	143	137	126	119	157	161	148	169	160	140	150	170	121	143	121	121[d]	105[d]
20	196	177	166	135	116[d]	126	195	160	166	121	119[d]	134	158	104	129	115	117[d]	125
21	161	152	144	110[d]	111	135	138	172	147	160	144	142	182	154	142	142	140	134
22	162	147	141	150	149	117	134[d]	160	128	159	108[d]	160	130	124	120	128	112	118
23	150	148	145	118	113[d]	157	198	149	133	136	129	152	124	156	168	148	110[d]	144
24	137	160	120	145	120[d]	142	182	156	150	131	153	157	124	120	116	106	142	104[d]
25	144	137	129	112[d]	109	118	124[d]	168	133	161	132	149	166	156	146	112[d]	124	138
26	166	160	154	158	157	150	172	181	114[d]	149	150	121	138	146	120	144	110[d]	132
27	141	165	163	153	126	109	128[d]	146	120	147	153	148	178	150	144	134	146	140
28	158	162	162	172	136	134	190	180	176	164	167	165	144	138	143	134	154	110[d]
29	130	150	126	143	143	127	143	178	121[d]	157	142	128[s]	150	158	138	128	130	136
30	148	134	153	110	164	154	192	161	147	153	161	161	180	170	144	146	138	170
31	158	171	154	126	152	109[d]	194	182	125	163	152	162	138	190	138[d]	124[d]	154	112
32	153	155	163	161	154	138	143	153	125	161	167	164	164	160	158	138	148	140
33	157	165	144	116[d]	134	118	204	164	157	152	145	139	150	115[d]	128	132	120[d]	154
34	145	148	135	125	98	120	153	183	179	165	136	143	156	146	148	126	160	158
35	143	142	140	160	133	141	169	167	155	162	146	122	148	164	132	120[d]	116[d]	126
36	149	120[d]	155	149	121	128	175	181	143	154	158	132	134[d]	168	180	138	138	148
37	143	128	149	117	143	131	141	136	153	145	160	143	172	138	138	132	138	134
38	156	113	122	135	141	145	156	125[d]	125[d]	140	107[d]	128	142	154	126[d]	126	120[d]	120[d]
39	137	130	141	167	151	136	182	183	178	126[d]	123	155	201	148	136	142	148	146
40	154	175	124	152	126	130	128	153	164	149	129	133	136	140	120	115[d]	128	126
41	156	134	143	138	124	137												
42	140	120	167	168	109[d]	150												

Recapitulation

Burst strength†	Total	6382	6111	6140	5857	5658	5612	6582	6605	5797	5925	5637	5717	6087	5597	5380	5250	5219	5127
	Average	152	146	146	139	135	134	165	165	145	148	141	143	152	140	135	131	130	128
Total punctures†		42	42	42	42	42	42	40	40	40	40	40	40	40	40	40	40	40	40
Punctures failing†	No.	0	6	6	11	14	12	1	0	7	2	8	6	3	10	9	12	16	16
	%	00.0	14.3	14.3	26.2	33.3	28.6	2.5	0.0	17.5	5.0	20.0	15.0	7.5	25.0	22.5	30.0	40.0	40.0

* Torque on clamping wheel.
† Does not include slips, but includes double pops.
d Indicates double pop.
s Indicates sample slipped.



5 COMPOSITE CURVES of nine corrugated board types tested for burst strength verify trend that increase in clamping pressure (clamping-wheel torque) decreases burst-strength test results. (Curves represent averages of over 7,500 pops on all board types tested.)

Slips And Double Pops

Since Rule 41 states that results from any "slips" in the sample during testing must be disregarded, we have not included these in our totals. In the accompanying tables, an "s" beside a result indicates a slip.

Rule 41 also states that "double pops" *may* be disregarded. We interpret this as an option—and we chose to include double pops in our totals. A "d" beside a result in the tables means a double pop.

RESULTS OF TESTS

Space precludes reporting all of the numerous data we have compiled; so, we have chosen to discuss a representative lot of each of the nine types of board tested.

Average Burst Vs. Pressure

Tables I, II and III show the data for these nine lots; Figs. 2, 3, and 4 show these results graphically. Each curve represents the average bursting strength for its respective board type at the six clamping pressures.

These nine curves show that the average burst strength decreases as the clamping pressure increases, indicating a definite effect of clamping pressure on burst strength. Also, in most instances, the biggest drop in average burst strength appears to occur from 2½ to 7½ ft.-lb.

Punctures Failing Vs. Pressure

Turning now to the number of puncture failures, Rule 41 allows, for a given lot of board, 16.7 per cent (1 in 6; or 4 in 24) of the punctures to be below certification. The recapitulations of Tables I, II, and III show the percentage of punctures failing at each of the six clamping pressures. These data point out the fact that, as the clamping pressure increases, the per cent of failing punctures increases.

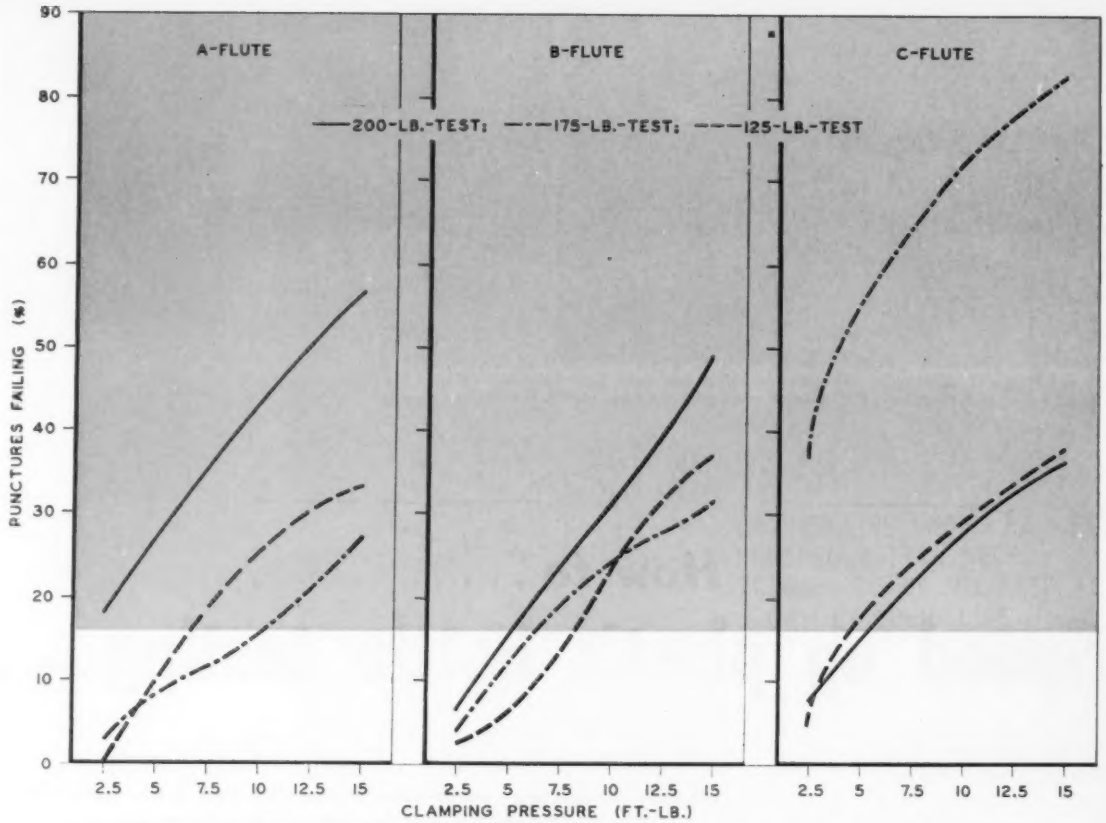
In general, the percentages of failing punctures, above the maximum allowed by Rule 41, occur at one of the pressures from 5 to 10 ft.-lb. In all instances, the percentage of failures at 12½ ft.-lb. is over the limit for the particular lots reported here.

By these latter two statements, we are not implying that excessive clamping pressure will cause failures of all lots of board under Rule 41, rather that they show a trend. Certainly, some of the lots tested did not fail when a clamping pressure of 15 ft.-lb. was exerted, while other lots failed when the clamping pressure exceeded 2½ ft.-lb.

No Effect On Double Pops

Regarding "double pops," it is interesting to note in the data that these occurred in no definite pattern; that is, regardless of clamping pressure. Thus, pressure apparently is not a factor in causing double pops.

Another interesting observation is the fact that slips occurred only at clamping pressures of 2½ ft.-lb. —none occurred at clamping pressures of 5 ft.-lb. or higher. This indicates that 2½ ft.-lb. of pressure



6 PERCENTAGES OF POPS BELOW CERTIFICATION amplify clamping-pressure effects—as pressure increases, per cent of punctures failing increases. Note: Most board lots tested at 2½ ft.-lb. would pass under Rule 41; most at 5 ft.-lb. or above would not. Red area shows percentages above 16.7-per cent maximum allowed by Rule 41 for given board lot. Curves are composites of averages of over 7,500 pops on all board types tested.

are insufficient to insure against any slips, but that 5 ft.-lb. or higher are satisfactory.

Verify Trend

The nine sets of data included in this article are a small portion of the numerous data we have collected. To give you an over-all picture of *all* the results of our tests, we have included a composite set of curves showing average burst strengths of the nine board types—over 7,500 pops—versus clamping pressures. (See Fig. 5.) Here again you can see the trend that an increase in clamping pressure definitely decreases the burst strength test results.

For a more vivid picture of the effect of clamping pressure on test results, Fig. 6 shows composites of all our data plotted as average per cents of punctures falling below certification, against the six clamping pressures. In Fig. 6 the curves show a well-established trend—that most lots tested at 2½ ft.-lb. would pass under Rule 41, but most tested at 5 ft.-lb. or higher would not.

CONCLUSIONS

From all of the data we have accumulated, we have drawn the following conclusions:

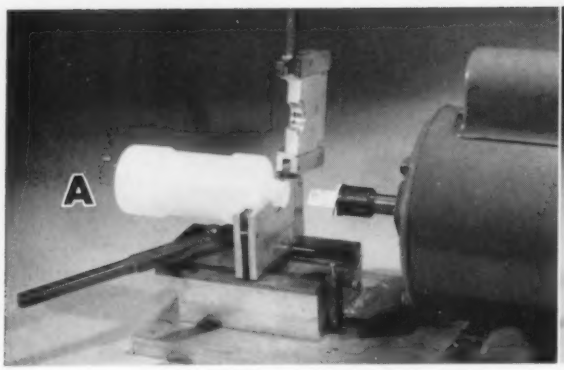
1. As clamping pressure increases, the average burst strength test results decrease.
2. As clamping pressure increases, the per cent of punctures falling below certification increases.
3. In most instances, the biggest drop in average burst strength test results apparently occurs from 2½ to 7½ ft.-lb. of pressure.
4. Clamping pressure apparently is not a factor in causing double pops.
5. A minimum clamping pressure of 5 ft.-lb. is necessary to prevent slips during testing.

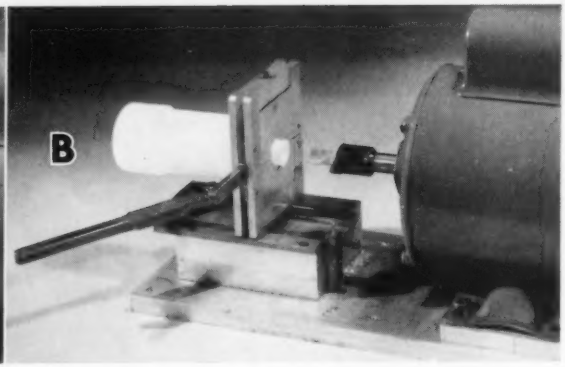
RECOMMENDATIONS

Since the *Uniform Freight Classification* and other carriers' regulations stipulate the Mullen test, it will probably continue to be a major factor in corrugated board evaluation. We strongly feel that the application of controlled pressure is necessary to make this test more useful and allow it to yield reproducible results.

We strongly recommend that the standard Mullen test method be revised to include a specific clamping pressure. This, no doubt, will reduce any potential disagreement between supplier and user.

Currently, we are revising our corrugated specifications to show that our incoming quality control Mullen test uses specific clamping pressure: minimum torque of 5 ft.-lb. on the clamping wheel. *(End)*





How to . . .

Speed up plastic bottle testing . . .

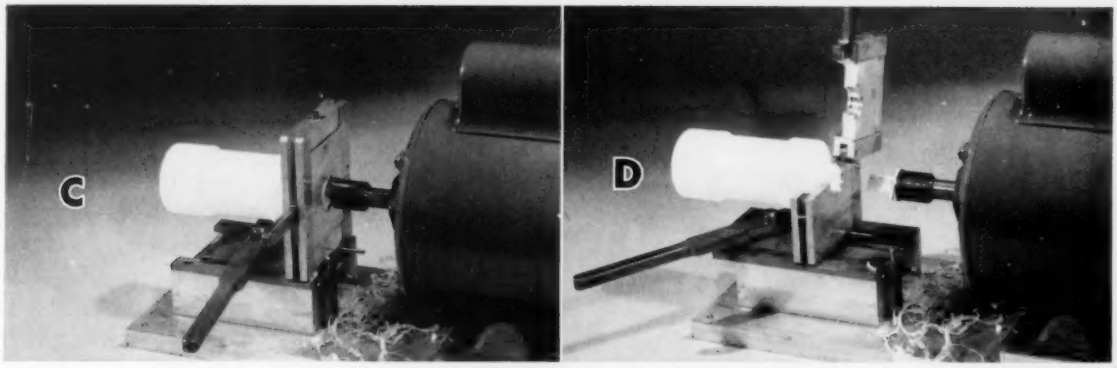
when evaluating containers blow-molded from polyethylene, ethylene copolymers, or other polyolefin plastics, for:

STRESS-CRACKING
PERMEABILITY
PRODUCT ALTERATION
CONTAINER DEFORMATION
IMPACT STRENGTH

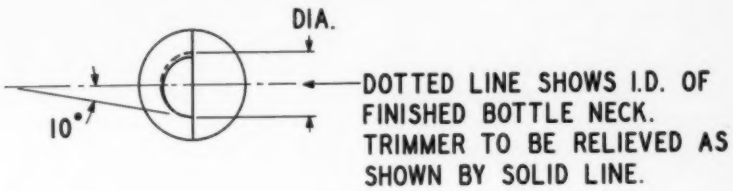
By Robert J. Martinovich, and Robert Doyle,
Sales Service Laboratory,
Phillips Chemical Company,
Bartlesville, Oklahoma

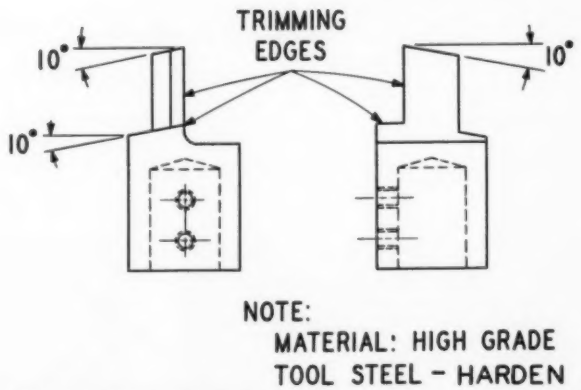
The spectacular rise of blow-molded plastic bottles within the past two to three years for the packaging of detergents, bleaches, and similar household products poses a new challenge for packaging engineers. Unlike metal, glass, or paper-based containers, plastic blown containers or bottles are introducing the packaging engineer to a new terminology, new concepts in testing and evaluation, and a new range of applications.

Plastic bottles now compete for uses once dominated by glass or metal containers. They have become new contenders in many applications where older types of containers had previously competed only with one another. These rapid advances in technology, plus ever-rising costs and shifting consumer preferences, necessitate having a basic understanding of where plastic bottles fit in today's packaging operations.



1 TRIMMING BOTTLES that are to be tested for stress-cracking assures vapor-tight seals. Trimming operation: (A) insert test bottle in clamp; (B) close clamp firmly; (C) move clamping block toward trimming blade *with motor running;* (D) retract block and open clamp.





2 REAMER-STYLE TRIMMING BLADE fits directly on motor shaft of bottle trimmer, consisting of bottle clamp block on sliding platform and motor on fixed base (see Fig. 1).

What is a good plastic bottle? Where do you use it? Many packaging engineers face these questions. Many others require only an appreciation of the factors involved in a sound testing program. The laboratories of the plastic bottle manufacturers and the resin producers are ready and willing to supply such information.

However, many times it is not feasible or desirable to go outside of one's own manufacturing opera-

A REMINDER

A sound testing program for containers blow-molded from polyethylene, ethylene copolymers, or other polyolefin plastics includes proper evaluation of stress-cracking, permeability, possible product alteration or container deformation, and impact strength.

tions for the answers. Furthermore, the need for quality control testing is continuous. Regardless of the initial approach, every packaging engineer using or expecting to use plastic bottles needs to understand their properties and some of the tests employed to measure these properties.

Developing Tests

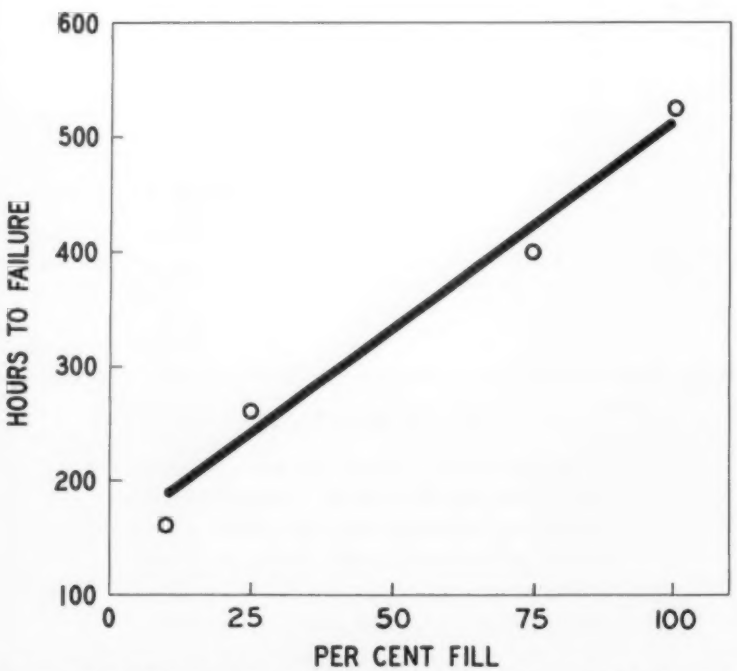
This article summarizes our own thinking in this area, based on years of intensive work to develop polyethylene and ethylene copolymer resins best suited for blown bottles and similar hollow ware. To evaluate these resins, we draw on known tests where available, and develop new tests in some instances. We continually screen, modify, and adapt these tests as we gain experience with both tests and materials.

Bottle producers and other resin suppliers have been doing similar work *(2);* there are many parallel efforts throughout the plastics industry. In fact, certain bottle producers, who have been testing blown plastic bottles since the early days of polyethylene "squeeze" bottles, have valuable experience in bottle evaluation procedures.

At the moment, there is no industry-wide standardization of plastic bottle testing. An ASTM "task force" has only recently started the job of standardizing test methods in this new field. Theirs is the monumental job of correlating work at numerous laboratories—not only with many different polyethylenes, ethylene copolymers, and other polyolefins, but also similar work with vinyl, acetate, and polystyrene blown containers.

Meanwhile, limiting ourselves to bottles blown from a 0.950-density ethylene-butene copolymer, and a 0.960-density polyethylene homopolymer,* we offer our latest procedures as a guide which the packaging engineer may find helpful.

*Marlex 5003 and 6002, respectively—Marlex is a trademark for Phillips' family of olefin polymers.



3 STRESS-CRACKING test is greatly accelerated as initial "per cent fill" is *decreased.* Note: Volume of liquid in test bottle significantly affects results—accuracy is necessary.

STRESS CRACKING

Under certain conditions of stress and in the presence of surface-active agents such as soaps, detergents, and a very limited number of other chemicals, polyethylene containers may fail due to a localized cracking. The small fissures which develop as a result of this phenomenon are known as *stress-cracking.*

However, by proper initial selection of a resin, followed by good container design and correct molding procedures, you may completely avoid stress-cracking. The success of detergent bottles molded from high-density polyethylene and ethylene copolymer resins proves this.

Information on whether a commercially standardized product causes stress-cracking is usually available from your bottle producer or resin supplier. If not, stress-cracking tests are required, especially for private formulations. Thereafter, you need only check this factor when making any change in the resin used or when considering a new bottle supplier.

Under ordinary conditions, stress-cracking appears only after an exposure of many months or even years. Since this would necessitate prolonged shelf-life tests before putting a product on the market in plastic bottles, obviously you need some accelerated testing procedure. Fortunately, time and temperature are interrelated. This means you can use extreme temperatures to provide a quick and reliable answer.

In the following procedure, it takes just a week or two to determine stress-cracking resistance to

any product because of exceptionally rigorous conditions imposed on samples.

Sample Preparation

To properly test a blown plastic bottle, you *must* provide a vapor-tight seal for the cap. Failure to do so would invalidate the test since stress-cracking would not then occur. Some extrusion and injection blow-molding equipment will deliver finished containers directly from the machine. However, many other machines, including those which we employ in our development work *(1)*, produce bottles which must be trimmed to assure a vapor-tight seal.

We have, therefore, built several bottle trimmers, one of these being illustrated in Fig. 1. This particular trimmer utilizes a ⅓-h.p., 1725-r.p.m. motor mounted on a fixed base. The reamer-style trimming blade (shown also in Fig. 2) is attached directly to the motor shaft. The bottle clamp block is then mounted on a sliding platform with a hand lever to facilitate moving.

It has stops which you can preset to allow the correct amount of travel, i.e., depth of cut, for each different bottle. You can quickly interchange trimming blades and can easily insert new bottle clamp blocks in the sliding platform to accommodate a wide range of bottle sizes and types.

It is important that the bottle clamp conform exactly to the neck of the bottle so that the clamp holds the bottle rigidly during the trimming operation. Otherwise, if the bottle moves even slightly, it is impossible to get a satisfactory seal.

In use, first set the stops for the desired depth of cut. Next, clamp the initial bottle into the holder and start the motor. Using the hand lever, then move the bottle neck into the trimming cutter, backing off again as soon as the trimming is complete. This first bottle needs careful examination. Then make any corrections or adjustments necessary. Thereafter, you need inspect each bottle only to insure that each provides a smooth, even sealing area for the cap.

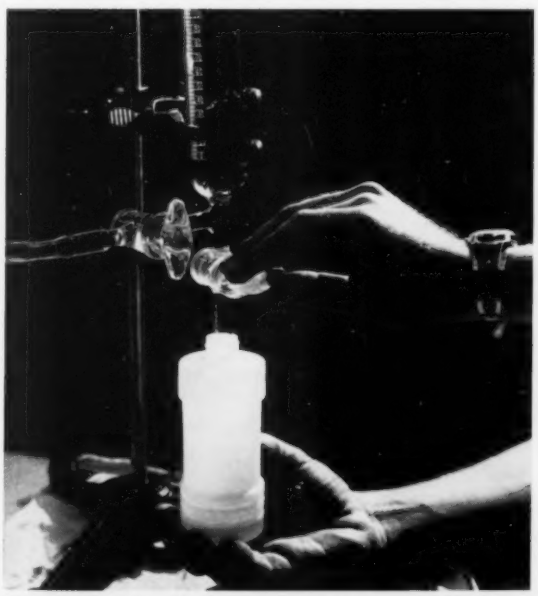
Filling And Capping

Since the volume of liquid in each test bottle significantly affects the data you get, it is vitally important to deliver accurately a given amount of liquid to each bottle. As shown in Fig. 3, when the "per cent fill" is decreased, this test is greatly accelerated.

To provide necessary accuracy, we use the 250-ml., double-stopcock burette illustrated in Fig. 4. The stopcock shown at the left side of the burette is connected to a 1-gal. reservoir containing the liquid to be packaged. Opening the stopcock to the reservoir fills the burette. Once the burette is full, close this stopcock.

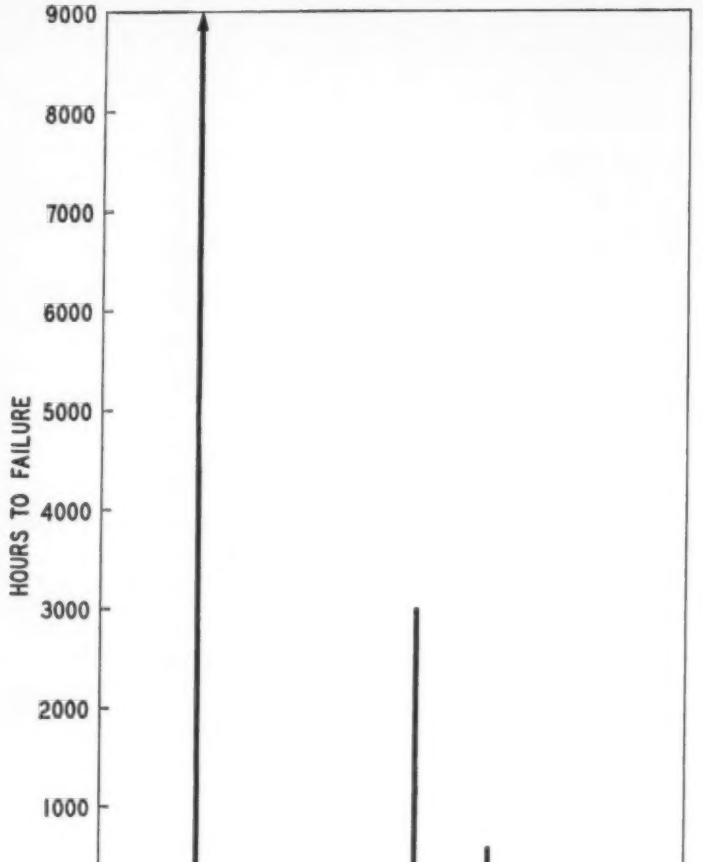
The bottles which pass inspection after the trimming operation then go into position under the second stopcock immediately below the burette for filling to a predetermined level. To simplify the filling operation, you may "graduate" your burette with a China marking pencil so that each interval provides the desired volume for one bottle. You should use ten sample bottles for each liquid and/or type of bottle to be tested so as to average out any slight, bottle-to-bottle variations.

Screw the caps on as soon as possible after filling, using 20 in.-lb. of torque. Incidentally, buttress



4 BURETTE ACCURATELY MEASURES predetermined amount of liquid into each test bottle—vitally important in getting consistent stress-cracking test results. Ten samples should be used.

5 CIRCULATING-AIR OVEN for bottle testing gives accurate temperature control which is very important for getting reproducible results. Phillips' standard oven temperature is 150 ± 1°F.



6 TEMPERATURE EFFECT on stress-cracking of 10-oz. bottles of ethylene-butene copolymer. Note: Since decrease of only 10°F. increases failure time about four-fold, 150°F. test temperature gives answer in about one-fourth time required at 140°F.

threads are usually preferable for plastic bottles. After sealing, invert and squeeze the bottles to make certain that there are no "leakers." Non-leakers, having been filled and capped at normal room temperature are ready for the test oven.

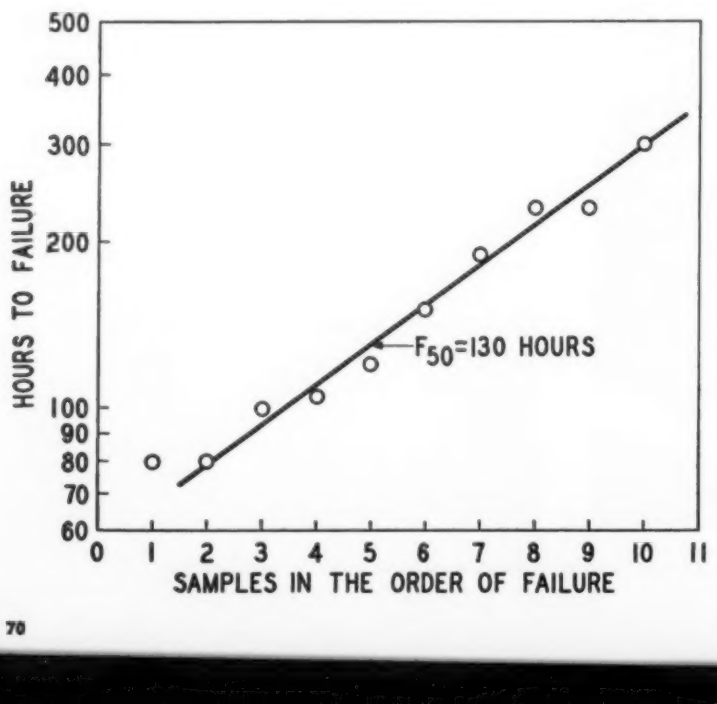
Testing

The circulating air oven or test chamber we use for bottle testing is illustrated in Fig. 5. We have standardized on an oven temperature of 150±1°F. Accurate temperature control of the test chamber during the test period is very important if you are to get reproducible results.

Fig. 6 shows the effect of temperature on the stress-cracking performance of 10-oz. containers blown from an ethylene-butene copolymer. Note that a temperature decrease of only 10°F. increases the time to failure by roughly four-fold. Thus, our 150°F. test temperature provides an answer in roughly one-fourth of the time required at 140°F., for example.

To further accelerate this test, we have also standardized on filling the bottles to only 10 per cent of their nominal volume. From Fig. 3, note that *again* we shorten the test period to about one-fourth of that which would be required with 100-per cent fill under otherwise identical conditions.

The bottles in the oven need checking twice daily for any indication of failure. A failure usually reveals itself by a collapse of the container wall if the bottle temporarily cools approximately 20°F. You accomplish this by leaving the door of the test chamber open for about 15 min. This does not upset the results, as the period at the



7 AVERAGE FAILURE TIME is arbitrarily F_{50} value. Note: Intersection of straight line (through plotted points) with vertical line representing 50 per cent of samples is F_{50} value (read on hours-to-failure scale). Curve is typical for 10-oz. bottles made of 0.95-density ethylene-butene copolymer.

maximum test temperature governs the time-to-failure.

In checking bottles, you may have to squeeze those which have not collapsed, in order to locate cracks—not all failures reveal themselves by a collapsed appearance. It is also necessary to tighten the caps periodically since plastic containers are subject to some creep at these elevated temperatures.

Next, summarize the data obtained in this manner in an *average* failure time which we arbitrarily designate as the F_{50} value. Plotting the hours-to-failure vs. sample number (in the order of failure) on semilog graph paper and drawing the best straight line through these points determines this value.

At the intersection of this line with a vertical line representing 50 per cent of the samples, read your F_{50} value from the hours-to-failure scale. Fig. 7 helps you understand this manipulation, as it is a typical plot for 10-oz. bottles blown under standardized conditions from a 0.95-density ethylene-butene copolymer.

Other testing procedures may yield results in a very different form. We note especially the fairly common practice of using a 140°F. oven and 100-per cent fill, and checking the test bottles only at the end of seven days on a strictly "go, no-go" basis. That is, if you observe *no* failures after one week, you may consider the product packageable in those bottles as far as stress-cracking is concerned.

This is an excellent control procedure. However, we believe that the more rigorous test outlined above provides a more complete picture, especially for development and exploratory purposes.

Interpreting Results

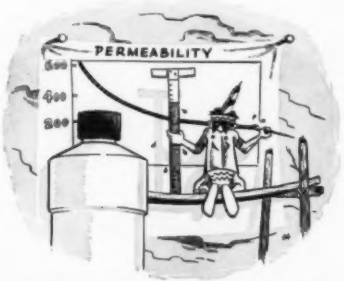
Bottles blow-molded from an ethylene-butene copolymer and filled to 10 per cent and 100 per cent of their nominal volume with a well-known household detergent have been aged for approximately 18 mo. at 80°F. without any indication of failure. The same type of container, when subjected to accelerated conditions of 10-per cent fill and 150°F., had F_{50} values between 130 and 150 hr. Thus, F_{50} values in this range are equivalent to *at least* 18 mo. at normal room temperatures.

You should note that we got the preceding results with 10-oz. bottles blown from a 0.950-density, 0.3-melt-index ethylene-butene copolymer under a specified set of blow-molding conditions. Any change in the geometry or thickness of the container, the molding resin and/or the conditions under which the containers were blown, will have a definite influence on the test results. In general, as density, melt index, and stock and mold temperatures increase, a corresponding reduction in resistance to stress-cracking occurs.

Robert J. Martinovich is a graduate of Marquette University with an M.S. in chemistry. After teaching chemistry at Marquette for two years, he joined Phillips Petroleum Company in 1955 as a chemist in its plastics application and research group. He transferred to Phillips Chemical Company in 1956, becoming group leader in charge of evaluation and compounding in 1957. In March, 1960 he assumed his present position, supervisor of evaluation and compounding.

Robert Doyle is a graduate of Northeastern University with a B.S. degree in chemical engineering. After 13 years in plastics research and production with several companies, he joined Phillips in 1956. His present title is supervisor, extrusion, calendering and thermoforming. Mr. Doyle is a Registered Professional Engineer, a member of Society of Plastics Engineers, and American Chemical Society, and is co-author of 12 articles on polyolefins.

PERMEABILITY



Unlike glass and metal containers, all plastic containers, being formed from organic substances, are subject to some permeation, however slight. Therefore, we must determine the permeability and related effects of each new product to be packaged in a plastic bottle. In the case of polyolefin bottles, two factors govern permeability: wall thickness and container density.

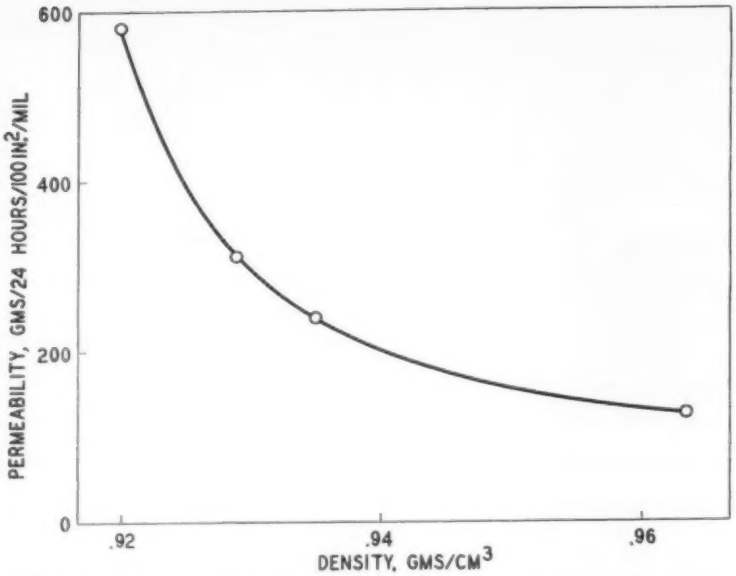
Wall thickness, a measure of the barrier the container affords, is obviously important. Fig. 8 shows the effect of container density. This curve illustrates the dramatic decrease in permeability which you find in bottles of increasing density. Although the shape of this curve, determined for benzene, is typical for a host of liquids, the absolute values will vary depending upon the chemical structure in each instance *(3, 4)*.

For this reason, it is necessary to measure the actual loss due to the transmission of each product to be packaged. By conducting shelf-life tests as described below, you can ascertain the packageability of each product.

Total Weight Loss

Preferably, you should carry out permeability studies in the same size containers that you eventually will use. However, because 4-oz. Boston-round bottles require a minimum of product and lend themselves to weighing on automatic analytical balances, many companies have standardized on this size for shelf-life tests. Two bottles represent the minimum for these tests; three are better.

After trimming the bottles as de-



8 **PERMEABILITY** of polyolefin bottle depends on wall thickness and container density. In benzene curve, note dramatic decrease in permeability as density increases. Curve is typical for many liquids—absolute values vary depending on liquid's chemical structure.

scribed previously for the stress-cracking tests, weigh each bottle and its closure (together) to the nearest milligram. Then, fill the bottles to nominal capacity with the product to be packaged. Next, cap, reweigh, and place them in a storage area at 80°F. for 3 mo. (Note: sometimes higher temperatures, e.g., 105°F., are used to simulate anticipated shipping and warehousing conditions.) During the test period, weigh the containers approximately every 2 wk. and determine the weight loss.

At the end of 3 mo., plot the average loss (gm.) against time (wk.). Then determine the slope of the resultant curve to give the average loss in gm./wk. Multiply this, in turn, by 52 wk./yr. and divide the result by the weight (gm.) of the contents at the beginning of the test period. Multiplying by 100 then gives the average percentage loss per year. The curve in Fig. 9 is a typical weight-loss-vs.-time curve; in this case, the contents again was benzene.

Interpreting Weight-Loss Data

General practice for most products is to assume that a weight loss of up to 3 per cent per year is acceptable. On this basis, a value of 3 per cent or less, determined as above, indicates that you can package the product under consideration in 4-oz., or larger, containers. A loss of greater than 3 per cent per year signifies that you cannot package the product in containers with a capacity of 4 oz. or less.

However, it is still possible that the product may be packageable in containers larger than 4 oz. Since the ratio of volume to surface area increases with increasing container size, the per cent weight loss would *decrease* with the increased capacity. If you know the weight loss per year of a product for a 4-oz. bottle, you can estimate the loss in a larger container by means of the following relationship:

$$L_x = \frac{t'c'}{s'} L_4 ,$$

where t', c', and s' are the ratios of the average wall thicknesses $\left(\frac{t_x}{t_4}\right)$, container capacities $\left(\frac{c_x}{c_4}\right)$, and surface areas $\left(\frac{s_x}{s_4}\right)$, respectively, and L_4 is the known loss from the 4-oz. bottle.

Thus, you may calculate the weight loss for the new container (L_x) by solving the above equation. Nielsen and Temple (5) have shown that the values obtained show good agreement with experimental results.

Although you demonstrate that a product has a weight loss of less

9 **WEIGHT LOSS** information for given product in plastic bottle is necessary to ascertain product packageability. Weight-loss-versus-time curve is for benzene, but is typical.

than 3 per cent per year and that it does not cause stress-cracking, your task is still not complete. Other factors to consider are possible product alteration and container deformation. The sections following discuss these separately.

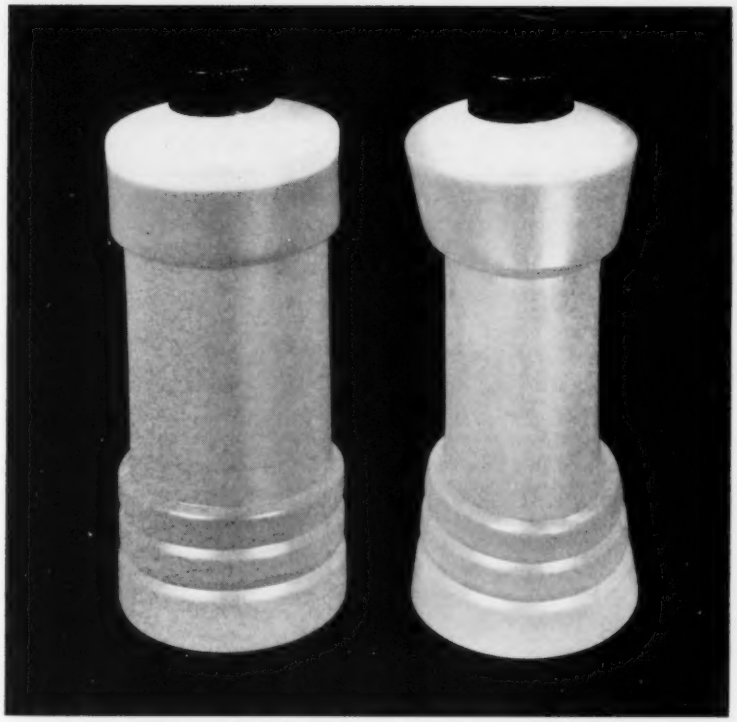
PRODUCT ALTERATION

In conducting shelf-life tests on one-component systems such as water, benzene, ethanol, etc., there is no question as to whether the product has been altered during storage. Commercially, the situation is most frequently complicated by multi-component systems, often involving one or more components in extremely low concentrations.

Because these latter components may impart the desired flavor or odor to the product, a large loss of one of these essential components might have little effect on the total measured weight loss per year, while still rendering the product unsalable.

We could cite other possibilities where permeability measurements alone will not reveal product alteration. One exception might be where the loss per unit time changes abruptly with time, indicating that at least one component has permeated much faster than the others and has been exhausted. However, such instances are rare.

The important point is simply that each new product should be checked for product alteration after the 3-mo. storage period. Knowing the composition or desirable qualities beforehand, post-storage evaluations may range from detailed chemical analyses to odor or taste tests. If the latter tests are indicated, fully qualified experts should conduct them since not everyone can detect and evaluate subtle changes in odor or flavor. In any event, the evaluation procedure you follow depends on the nature of the product to be packaged.



10 **DEFORMATION** (right bottle) usually results from reduction of internal pressure—due to various causes easily corrected. However, bottles not sealed have been known to deform, apparently due to other factors; thus, actual product and container *must be tested.*

CONTAINER DEFORMATION

Another important requisite for good packageability is that the container should not exhibit any deformation during normal storage. Deformation appears (see Fig. 10) as an inward collapse of the container wall, usually due to (or perhaps aggravated by) a reduction in the internal pressure. This can occur as a result of excessive permeation by the contents through the wall, but you normally screen out such cases on the basis of weight loss alone.

Deformation may also result from filling and capping the containers while the product is too warm. This condition, however, can be readily corrected once the cause is recognized.

We are limiting this discussion, therefore, to instances where the yearly weight loss is acceptable, the filling temperature is satisfactory, and yet the product promotes a collapse of the container. This type of deformation may be related to a solvation of the container itself with a corresponding increase in the capacity of the container. We have encountered other examples of deformation due to an absorption of the oxygen above the contents in a bottle. In either instances, we would normally at-

tribute any such deformation to the vacuum created within the tightly capped bottles.

However, we have noted deformation in bottles which were *not* sealed. We must conclude, therefore, that factors other than those which reduce the internal pressure of the bottle may sometimes cause deformation.

Actual Tests Necessary

Since the latter factors are not understood at this time, we know of no empirical relationships which accurately predict whether a particular product will cause container deformation. Therefore, actual packaging tests are necessary.

You might use the same 4-oz. bottles (used for the permeability studies) for judging deformation. However, unless the product is to be packaged in 4-oz. quantities or less, we do not recommend this practice. This is because small bottles are much more resistant to deformation and collapse than the larger bottles. If the product is to sell in quantities above 4 fl. oz., the test bottles should be as large as the largest bottle you are considering. Or, there should be a *minimum* capacity of 16 fl. oz. where you anticipate using still larger containers.

Since deformation tends to become more pronounced in a thinner wall when it does occur, we suggest also that the deformation test bottles be as thin as any which may go into production.

IMPACT STRENGTH

One of the advantages of polyolefin bottles is their well-known resistance to breakage. Hence, any discussion of plastic bottle testing would not be complete without some mention of impact tests. Generally, this consists of filling a minimum of three sample bottles from the production line with water, capping them, and then dropping them from a height of 4 ft.

Drop Test

Drop each bottle first squarely on the bottom, then the side, and finally the top. If you note no failures, increase the height by 2 ft. and repeat the same procedure.

Continue this with the *same* bottles until failure occurs or you reach a height of 12 ft. You usually regard bottles as acceptable if they pass an impact drop of 6 ft.

For more complete information on impact properties, we have used the "Bruceton Staircase" approach. This is a statistical technique which was reported by the Statistical Mathematics Panel of the National Defense Research Committee in July, 1944. While 25 to 50 sample bottles are required, the procedure is specifically designed for precisely determining drop-height properties. Hence, it is an excellent procedure for establishing optimum limits due to changes in the resin or the conditions of the blow-molding operation.

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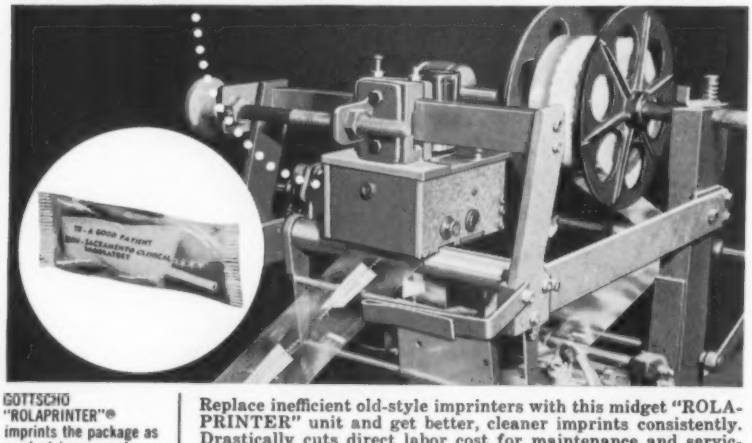
Here's the wrapping machine imprint attachment that obsoletes all others



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Booth 821 • Packaging Show

Wisconsin course, geared to needs of one-man packaging teams, presents practical pointers leading to the design of packages acceptable to management.

Four steps to effective design

1—Knowledge of product
2—Knowledge of materials, methods, equipment
3—Technique of structural, functional design
4—Selling the package to management

Some 111 packaging people recently attended "practical package development—step by step," a two-day engineering institute of The University of Wisconsin's extension division held at Madison.

On the opening day, three speakers discussed knowledge of the product, then took part in a round table on that subject. During the afternoon, four speakers reviewed knowledge of packaging materials, methods and equipment, then opened the floor to discussion.

Following Through

On the second day, four speakers examined the technique of structural and functional design of a package, after which they participated in a panel discussion of this topic. During the final session, two speakers told how to sell the new package to management, and a representative of management told the audience how management views new packages.

KNOWING YOUR PRODUCT

Reviewing problems of knowing the product, George Reed, packaging engineer, AC Spark Plug Div., General Motors Corp., Milwaukee, urged checking all sources of information about hazards and requirements, such as dropping, vibration, distortion, change of a product's position in the package, crushing, or dirt.

He asserted that it is important to cater to the needs of the packaging foreman who must make the package "work" economically. Noting that most packaging is a matter of opinion, Mr. Reed said it is often hard to convince people of the adequacy of a package: "You must be willing to stick your neck out on a particular package," he emphasized.

"One Point At A Time"

"Break the product components into categories to study protection one point at a time," John Kissinger, packaging engineer, J. I. Case Co., Racine, advised his audience. He noted that getting full knowledge of the product includes details of the material in it, how it is put together, and at what point in the operation to package it. He asked: "How do you store it? Ship it? Use it? Is your package comparable to or better than your competitors'?"

Mr. Kissinger explained that answering these questions often means getting in on the design of the product. Further, these questions and answers bring out the decisions to make. In this connection he said that packagers should pay more attention to details of use-out and unpackaging by the recipients of their packages.

Know About Product Use

"The engineer can never make a package to withstand all possible misuse, but he can make it reason-

ably foolproof," George Ryan, director of packaging, Abbott Laboratories, North Chicago, Ill., said as he explained the problems of users not understanding simple packages. Pointing out that a packaging engineer should visit end users to get full information about package and product, he reviewed problems of establishing the conditions surrounding the product—how, where, and by whom used.

"Knowing the conditions of use can drastically modify a package," he said, urging his audience to be alert to buyers' wants and needs. "You must not stay at your desk and work only with internal information," he warned, suggesting that engineers get in the field themselves. "Time spent with consumers shortens the package development time," he explained.

Having a large packaging department is fine but "creativity is individual," according to Mr. Ryan. He explained that usually a packaging advance is primarily the work of one person. Discussing the measurement of packaging effectiveness, he noted that "you can't use percentage figures" primarily because of variation in product value.

Percentages—Pro And Con

Mr. Ryan's comment about packaging as a percentage of some cost sparked a lively discussion among participants. The consensus of the group supported Mr. Ryan's view, and various speakers indicated the difficulties of trying to assess percentages. One problem is that it depends who is establishing the figure and from what basis—such as a percentage of sales.

Others indicated it is hard to pin down just what packaging costs are, and one participant cited the case of a company that counted only the cost of materials as packaging costs because it was charging its packaging machinery operation to "maintenance."

But Charles Lincoln, package engineer, Bell & Howell Co., Chicago, asserted that his company's packaging costs are 1½ per cent of manufacturing costs, and he cited examples indicating how this works out.

Some said that low packaging costs may mean high service repair or replacement costs due to poor packaging. Still others cited that the futility of trying to pin down packaging costs when production for a given item is divided between military and civilian markets.

KNOWING YOUR MATERIALS

Leading off the session devoted to knowledge of packaging materials, methods and equipment, Jack Karst, parts research supervisor, Massey-Harris-Ferguson, Inc., Racine, reviewed his plant's packaging and shipping operations and urged attention to standardization and simplicity. He warned his audience to standardize packages as far as possible.

Discussing the knowledge of packaging materials, Arnold Kunz, American Paper Co., Milwaukee,

ARTHUR COLTON COMPANY
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U.S.I. POLYETHYLENE NEWS

A series of advertisements for plastics and packaging executives by the makers of PETROTHENE® polyethylene resins

APRIL, 1961 U. S. Industrial Chemicals Co., Division of National Distillers and Chemical Corporation 99 Park Ave., N. Y. 16, N. Y.

Packaging Notes

Liquid-tight carton with built-in liner of polyethylene-coated paper requires no overwrap. Heat sealing, hot-melt

Wrapless frozen-food carton developed on West coast has polyethylene-coated paper liner which interlocks with flaps on folding. Subsequent heat sealing and gluing complete liquid-, vapor-tight closure.

adhesive and unique design of package all contribute to leak-proof closure. It has proved commercially acceptable for packaging frozen strawberries.

According to the company adopting it, this folding box and special integrated machine which opens, fills and seals it have boosted production speed substantially. Furthermore, it reportedly costs less, is easier to open and provides a better barrier to transmission of water vapor than the metal-end fiber can it has replaced.

Polyethylene squeeze bottles for cosmetics, and toys and Christmas ornaments are now being finished by a new vacuum

metallizing process. Result is an adherent metallic coating—with a texture—which reportedly withstands many squeezings and takes printing without pre-treatment. A choice of colors is available.

According to the developer, process is competitive in cost with ordinary plastics metallizing.

Clams-in-the-shell have joined the growing list of polyethylene-packaged, individually quick-frozen foods. Whole frozen clams are now available on the west coast in 7½" x 13", 3-mil polyethylene bags. According to the marketers, polyethylene was selected for packaging because "it is relatively inexpensive and controls breakage."

Be sure to visit the
U.S.I. EXHIBIT – BOOTH 1112
30TH NATIONAL
PACKAGING EXPOSITION
LAKE FRONT EXPOSITION CENTER, APRIL 10-13
CHICAGO, ILLINOIS

Show Bound? Visit U.S.I. Booth For New View of Polyethylene Packaging

Experts to Demonstrate Latest Equipment . . . Discuss Recent Resin Developments

An array of packaging, injection molding and bag-making machines *in action* will be U.S.I.'s main attraction in Booth 1112 at the 30th National Packaging Exposition. Sponsored by the American Management Association, the show will be held April 10-13 at Chicago's Lake Front Exposition Center.

To Package Give-Aways

In operation will be three See-Safe packaging machines, which automatically package objects in polyethylene film from slit roll stock. This lineup will include: the Model MA, packaging free give-away items; the MA Jumbo, packaging large products in one step; and the brand new MA-T tilt-top machine, pouring and packaging small parts in quantity.

Two Conapac machines will also be featured by U.S.I. The "Roto Poly-200", a high-speed heavy-duty machine, will be making bags from blown polyethylene tubing. It has a capacity of up to 200 cycles/min., operates at speeds up to 175 ft./min. This machine is reportedly the first which can handle *any* density polyethylene film. The "Rotojet" Model T5 will be injection molding small polyethylene containers. Said to be the first rotating turret type machine to appear in this country, it operates at speeds up to 50 shots/min., uses 8 inexpensive single-cavity molds.

New PETROTHENE® Resin

For extruders, converters and packagers of produce, soft goods, hardware or toys, the highlight of U.S.I.'s exhibit will be a new PETROTHENE polyethylene resin. Film extruded from it *combines maximum clarity and gloss with high impact strength, and offers optimum performability as well.* It machines with ease . . . prints without problems . . . seals readily and securely. Samples, application information and complete technical data will be available for this and all other PETROTHENE resins.

The See-Safe MA automatic packager (top photo) and Conapac Poly-200 bag maker are 2 of 5 new machines U.S.I. will feature at the 1961 exposition.

Coated Substrates and Blow-Molded Containers

On display, too, will be samples of polyethylene-coated kraft, foil and cellophane. And, a variety of containers—including bottles produced from new PETROTHENE blow-molding resins. Of particular interest will be the 5-gallon collapsible jug just put on the market.

Information Center

U.S.I. technical representatives will again be available to answer questions and talk over innovations in polyethylene packaging. Exposition visitors are encouraged to use this opportunity to get expert help on specific problems.

U.S.I. to Produce Linear Polyethylene

U.S.I. will begin construction this spring on a 60 million pound-per-year linear polyethylene plant at Houston, Texas, adjacent to the company's conventional polyethylene facilities. The new plant, which will mark U.S.I.'s entry into the manufacture of linear polyethylene, is scheduled for completion in the fourth quarter of 1962. It's designed for easy expansion.

Recently there has been considerable discussion about over-capacity in the linear polyethylene field. Dr. Robert Hulse, general manager of U.S.I., states: "We would not be building this important new plant if we did not believe that over-capacity is a short-term problem and that linear polyethylene is growing in importance. Every market projection we have made indicates that this versatile plastic will be in short supply by early 1963!"

The linear polyethylene will be manufactured under a licensing agreement with Phillips Petroleum Company, and will be sold under U.S.I.'s trade name, PETROTHENE® polyethylene resin.

Linear polyethylene is stronger and more rigid than the conventional type. Uses are: blow-molded bottles and containers; injection molded toys and housewares; extruded pipe; and film for heavy duty bags.

offered this warning: "Be sure that the people in the plant know what the materials are for." He reviewed the effect of different packaging papers on the products they contain, and cautioned against misapplication and reliance on invalid tests. He urged his audience to carry on an educational effort, to tell people "who should know" about the right and wrong application of packaging materials.

"There is much confusion concerning materials in the field," Alfred Lilienfeld, president, Protective Packaging Co., Chicago, declared, urging his audience to be alert to differences in them. "Don't be misled by appearances," he said, suggesting that "we keep an open mind about the pro's and con's of material characteristics." Mr. Lilienfeld suggested being fairly sure of the meaning of common terms—e. g., to avoid confusing "waterproof" and "water resistant." He concluded that manufacturers do not give users enough technical information.

Watch Unpackaging

More attention to unpackaging can avoid damages that result from getting the product out of the package, according to Herbert R. Jackisch, president, Major Packaging, Inc., Addison, Ill. But in choosing the materials for a package, narrowing down their selection is a real problem. He urged following a systematic analysis and tracing the path of product and package.

Describing the role of machinery selection in the package development process, Arthur Schaefer, customer service manager, New Jersey Machine Corp., Hoboken, N.J., reviewed the Packaging Institute machinery analysis forms, noting their relationship to basic problems of machinery selection. He urged complete, proper specifications. In particular he cautioned his audience to be sure they understand the implications involved when they seek exceptions to standard clauses.

STRUCTURAL, FUNCTIONAL DESIGN

Opening the discussion of structural and functional design of a package, William Vedder, packaging engineer, Louis Allis Co., Milwaukee (he puts "functional" before "structural"), said that such design takes the coordinated effort of various people and departments. "You should question your existing package and work closely with other departments," he said, pointing out that traffic, for example, can help in pinning down damage.

In approaching design, he said to start with the function and build a design to meet it. He also said that the packaging engineer should be alert to ways of saving time.

Raising another point, he said, you should question the design of the product itself, citing as an example the taking of a conduit box off a motor in order to package it beside the motor within the container. Taking such steps as this leads to "big savings, little breakage, and reduced cubage use," Mr. Vedder pointed out.

Master The Details

"The technique of design depends on your assembling all possible facts, learning to challenge every detail, and learning how much protection (and of what) is necessary," Fred H. Bither, Jr., manager, packaging development, The Upjohn Co., Kalamazoo, Mich., explained. Noting that details of package and product use are important, he said that "you should check your materials in the light of your functional needs."

He cited as typical the development of a container and closure requiring drops of mineral oil on the bottle stopper to be sure of a correct fit in each bottle. "The public is conditioned to packages that are structually adequate and functional conceived," Mr. Bither concluded.

Questions And Spec's

"Soundly designed packages are no mere dream and there are no

LITTLE CONVENIENCES ADD UP TO . . .

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Up-to-the-minute improvements in design and operation of Comet Packaging Machines have increased production and cut cost on Visual Packaging.

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How Union-Camp's 5-Star Multiwall Plan increased a pallet payload by 400 lbs. . . without increasing its size!

A leading supplier of high density resins* had been packing his product in 50-lb. sewn-bottom multiwalls. This gave him an efficient, 40-bag (2,000 lb.) pallet load.

When he added a *low density* resin to his line, however, he found his existing bag wouldn't accommodate 50 lbs. of the new resin due to its increased volume. A slightly larger, sewn-bottom multiwall was tried, but this reduced the pallet payload to 32 bags (1,600 lbs.). Net "loss": 400 lbs. Net result: more handling . . . more trips to the warehouse . . . higher cost.

Heightening the pallets to 10 tiers instead of 8, offered no solution—they wouldn't pass through the existing archways. To say nothing of the problem of loading trucks and trailer cars.

New bag does the trick

At this point, the 5-Star Packaging Efficiency Plan went to work. Union-Camp multiwall specialists experimented with several different bag sizes and styles. Their solution—a multiwall with a *pasted* bottom and side gussets, a *rectangular*-shaped base—and 20 per cent more capacity!

With the new design, 50 lbs. of the low density resin can now be packed in each bag. Most importantly, the pasted bottom bags can be palletized five to a tier, eight tiers to a skid for a total payload of 2,000 lbs.—the same as the high density resins.

Warehouse space saved

The pasted-bottom bag offered several outstanding advantages. It permitted better use of warehouse space. It increased the yield per warehouseman to *1,000,000 lbs. a month*. And it initiated the development of a similar design for the company's high density resins, which could increase the present pallet payload to 2,500 lbs.

Space-saving secret is in bottom of bag. New design (left) with rectangular-shaped base has 20 per cent more capacity than sewn-bottom bag (right).

Works for you five ways

Apart from bag construction and materials handling, Union-Camp's 5-Star Plan covers bag design, packaging machinery and specifications control. An improvement in any one of these areas conceivably could result in substantial savings for you. In any case, it costs nothing to find out. See your local Union-Camp man for complete details.

2,000 pallet load of new, low density resin bags fits easily through existing doors.

FREE 16-PAGE BOOKLET

Write Dept. M-3 today for a free copy of Union-Camp's new 5-Star Plan booklet. It describes many case histories showing how packers like yourself have achieved greater efficiency and economy in their multiwall operation.

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shortcuts to them," Richard Pfohl, International Harvester Co., Melrose Park, Ill., asserted. He suggested that typical questions to ask about an item should include: Cost? Value? Fragility? Single unit or unipack? Volume? Where or at what point to do the packaging is a problem, according to Mr. Pfohl. He said that standardization both at plant and company-wide levels is worthwhile, but he added that in one instance 5,000 standard packages have now grown to some 10,000.

A packaging specification should do three things:

1. Spell out the packaging material.
2. Operate as a process and inspection guide.
3. Let the cost department pick up the costs right from the spec.

"Don't set unrealistic tolerances and be alert to changes leading to cost savings," he said, warning his audience to watch out for "intangible" costs, such as paperwork in a large company. He said that in final analysis, actual performance must prove a structural and functional design, and he noted that it never has been possible to duplicate actual field conditions.

Six Steps To Design

In electronics, the packaging engineer has been used to thinking in terms of a component package while the industry itself has thought in terms of "black box" packaging—a one-way container, according to William MacCrehan, manager, quality control, Avionics Products, Bendix Radio Div., Bendix Corp., Baltimore.

Noting that such manufacturers were leaving customers dangling as to subsequent or re-use packaging, he recalled how they came to plan packaging for a customer which the customer did not have to pay for. Aside from providing adequate protection, such as against fall and bounce, Mr. MacCrehan urged attention to points of use. "Remember people in shipping departments are not Ph.D.'s," he observed, indicating that packages need easy preloading features.

To find out what a packaging problem is, he suggested six steps to the kind of package development that interests and stimulates management:

1. Study your own plant and define your project.
2. Make a mental tie-in, or size-up.
3. Pick a problem and try it out.
4. Run a typical item through the problem stage.
5. Test it out on a prototype.
6. Unveil and apply your solution.

While he warned his audience of the importance of having realistic tests in evaluating packages, he also pointed out that "you will find the customer is impressed by the manufacturer's interest in and concern for the product."

"SELLING" YOUR PACKAGE

In selling a package to management according to Charles Lincoln, package engineer, Bell & Howell Co., Chicago, "You must know (1) what and (2) why you are selling." Noting that management often is ignorant of true packaging functions, he asserted: "We have to convince management that we are not heroes—there are limits on what we can do."

He said that having a percentage of manufacturing cost assigned for packaging provides a tool which is (1) a yardstick of packaging reliability, and (2) a guide to the raising of packaging costs. Cautioning his audience against accepting whatever a manufacturing department sends down in the way of product, he suggested rather that packaging has a responsibility to urge the change or improvement of a product itself.

He told his audience to be sure that packaging costs include "everything," including the cost of field damage, which, at his company, becomes a packaging responsibility if the damage can be attributed to a package.

"Packaging has the burden of

Chaffee Heat Seal Label Applicator and Heat Sealer

A. Filled bag being put into infeed of heat sealer
B. Bag being conveyed to awaiting Label 4
C. Bag activating switch that activates placement
D. Bag entering heat sealer
1. Label folder
2. Cut label awaiting action of "label folder"
3. Folded label & bag being conveyed to sealer
4. Label resting on folding mechanism
5. Twin belt label conveyor
6. Knife

NEW! Exhibiting for the first time the CHAFFEE HEAT SEAL LABEL APPLICATOR which automatically places the label header on to the filled bag; then bag and label conveyed thru the heat sealing machine on a production line basis.

Booth #1121—AMA National Packaging Exposition—Exposition Center, Chicago April 10-13, 1961

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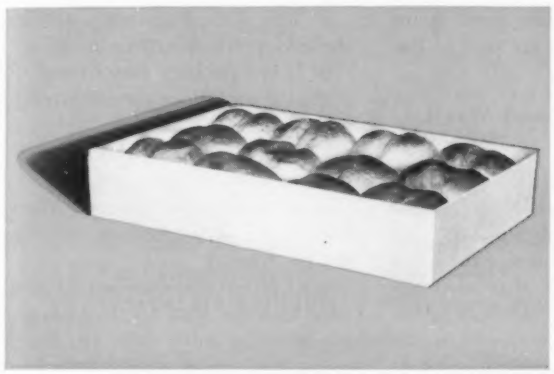
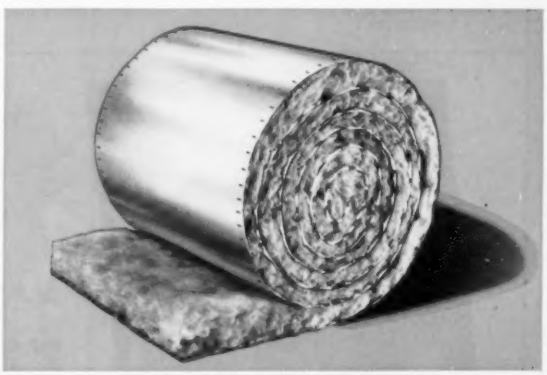
(and how the Arabol man can provide them)



1. GREASE RESISTANT LINER TO PAPERBOARD—Millions of boxes are used monthly by the bakery trade. A large percentage of these are made by adhering a grease resistant liner to paperboard. Adequately bonding these surfaces depends on the rate of set and the moisture and grease resistance of the adhesive, so that a non-wrinkling, non-curling lamination is produced. If you have experienced problems in this area or in the adhesion of difficult materials, talk them over with your Arabol man. He can help you.

2. GLASSINE TO KRAFT PAPER—Holding moisture *out*—and *aroma* in — is the reason for preferring this material in packaging coffee, spices and the like. The bouquet that follows the opening of a new package proves the point. Bonding the glassine "liner" to the kraft stock is economical, effective and easy with adhesives formulated for this purpose by Arabol. Let your Arabol man show you the different types of adhesives, and demonstrate their superiority for your specific applications.

3. CELLOPHANE TO POLYETHYLENE — One of the most widely used packaging materials in the food field is laminated cellophane and gluable polyethylene. Adequate bonding of these materials demands an adhesive with three distinctive properties: 1. Good adherence. 2. Transparency. 3. Stability against wide-temperature changes. There are a number of adhesives in the Arabol family that fulfill these requirements . . . consult your Arabol man. He'll be glad to tell you about them.



4. FIBERGLAS TO POLYVINYL CHLORIDE—Because of the nature of both materials, these increasingly popular insulating materials can bring bonding problems — blistering, bleed-through and mold growth sometimes develop. The plastic film (or even foil) does not readily take to average adhesives. However, there is one special emulsion adhesive which is highly effective for economical and durable bonding of the two difficult surfaces. Your Arabol man will be glad to talk with you about it.

THE BEST WAY to solve adhesive problems is to prevent them from happening. Begin by telling us *all* the conditions your adhesive must meet—in plant, in transit and after it reaches your customer. To help you evaluate these conditions more fully we have prepared an interesting booklet that can save you aggravation —and money. It's called "HOW TO BUY ADHESIVES—23 Basic Yardsticks." Send for it today.

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proving it is a necessary profession," he declared. "Have a clear understanding of your own objectives and the results you will get." In this connection, he stressed the need of knowing in what area the benefits of packaging occur. This helps in selling a package to management. "In summary, tell management what you will do, how you will carry it out, and what the results will be," Mr. Lincoln concluded.

Taking Responsibility

Noting the difficulty of finding out what management preferences are, Glenn B. Elliott, vice president, A. George Schulz Co., Milwaukee, told his audience to give management a choice. But he warned of the perils of "groupthink" and group decision making in presenting a package to management. Someone must spearhead the effort: "Who is the expert, who will take the responsibility for stating something to management?" Mr. Elliott queried.

He reminded his audience that management is expert in listening, and "can get you mad" as a part of its technique of drawing out facts and figures pertinent to a decision. Stressing the importance of concentration on problem solving, he said: "You are either working on the solution or you are part of the problem."

What Management Wants

Speaking as a representative of management, R. J. Hondlik, manager, parts sales, Electro Motive Div., General Motors Corp., La Grange, Ill. (he once worked in packaging), stated that management's viewpoint is basically favorable, provided a few questions can be answered. Looking at packaging from the triangular viewpoint of (1) sales and service, (2) warehousing and distribution, and (3) the customer, Mr. Hondlik cited these questions:

1. Will the new package increase sales?
2. Will it simplify warehousing?
3. Can we package it mechanically or do we still do it manually?
4. Will it palletize?
5. Will it contain realistic customer quantities?
6. How about low cost?
7. How safe is the package?
8. Will the spare part get to the end product satisfactorily?
9. Is this package easy to use?
10. Is it special, or does it involve multiple use?
11. Can we better combat competition with it?
12. Whose idea is this, anyway—from some department or customer, or whom?

Answering the question of just who had the idea for a package, Mr. Hondlik noted there are many sources of good ideas, including the plant suggestion system. In summary, he cited five aspects of a package to satisfy management:

1. Positive identification.
2. Physical protection.
3. Atmospheric protection.
4. Storage effectiveness.
5. Merchandising appeal. *(End)*

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the machines that think for themselves!

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- **Utmost Versatility!**
- **No skilled help necessary!**
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MRM is by far, the leading designer and producer of liquid filling machines. Check any manufacturer who is particular about his product and package... with a respect for critical care of production costs... chances are you will find MRM's setting the pace.

If your product is one of the following MRM is the best choice from every point of view —initial cost, trouble-free operation, versatility.

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- ☐ Detergents
- ☐ Edible Oils
- ☐ Fruit Juices
- ☐ Hair Colors
- ☐ Insecticides
- ☐ Iodine
- ☐ Lighter Fluid
- ☐ Liquid Sweetener
- ☐ Liquid Bleach
- ☐ Mineral Waters
- ☐ Motor Oils
- ☐ Perfumes
- ☐ Peroxides
- ☐ Photograph Chemicals
- ☐ Salad Dressings
- ☐ Shoe Polish
- ☐ Skin Lotions
- ☐ Shampoos
- ☐ Stop Leak
- ☐ Vitamins
- ☐ Whiskey
- ☐ Wine

Submit samples of your containers (filled and labeled) plus your approximate production requirements and we will supply you with detailed recommendations and quotations on the machine best suited for your needs. You are not obligated in any way.

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Manufacturers of a complete line of liquid filling machines, labeling machines and conveying equipment.

For more information circle No. 258 on Reader Service Card

Changing to a corrugated container for packaging a heavy machine tool, this company has improved the efficiency of its manual packaging operation, slashed the package cost by two-thirds—and still gets the vital protection for sensitive alignment features of the equipment.

Heavy equipment packaging

By Don J. Lockyer,
Packaging Engineer,
The Dumore Company,
Racine, Wisconsin

Heavy machine tools pose many problems for the men concerned with packaging them. For instance, how do you keep a heavy machine from moving around in the package? How do you protect sensitive alignments in the machinery? How do you keep the necessary small extra components in the package from shifting around?

As manufacturers of precision industrial tools (such as grinders, milling equipment, and drill and tap units), we had to answer these questions with the right package.

One of our products is a mountable drill and tap unit used in, for example, the automobile and aircraft industries. Although heavy-duty drilling or tapping machinery may not seem fragile or delicate in any sense of the word, we have to protect it against shock damage. This primarily concerns protecting the chuck shaft alignment. If the shaft is jarred out of alignment, the drill unit becomes useless until extensive repairs can be made. We must therefore gear our packaging to protecting a heavy, but sensitive, machine.

Old Package

We used to make up about fifty heavy-duty, nailed wood crates at a time for shipping the drill and

PACKER PUTS heavy-duty drill and tap unit into small corrugated container which was previously placed inside large outer shipper.

CORRUGATED DIVIDER between drill shaft (left) and motor (right) folds over motor. Unit fits into die-cut sheet in bottom of box.

tap unit, at a cost approximately three times what we are paying for our present package. Not only were the wood crates comparatively more expensive, they also took up valuable storage space after they were built since only ten to fifteen crates were used a week. We had to use a lot of bracing materials, and the crates were a safety and housekeeping problem. They were time-consuming to build, they splintered, and were difficult to handle once they were put together.

Our present package (double-wall corrugated) is less expensive and takes less effort and time to set up. We can prepare the boxes as we need them so that storage space is saved (up to 90 per cent over the crates), and we need no hammer, nails, or wood screws to put the boxes together. Since the protective characteristics of the present package are equal to the old wood crates, we can justify use of corrugated containers on a cost basis alone. Space savings, safety, and housekeeping benefits (no sawdust, chips, or splinters to clean up) are all added attractions.

Present Container

Our present package, along with other interior packaging components, consists of two end-opening, double-wall corrugated, regular slotted containers—one smaller to fit inside the outer shipper. The smaller inner container measures 24⅜x11⅝x17⅞ in. and holds the drill and tap unit and several small components and accessories for the unit. The outer container measures 25⅜x14⅝x24½ in. and holds the inner container and a control panel which is packaged separately from the drill and tap unit. Both containers are made of 350-lb.-test, A- and B-flute board.

Don J. Lockyer attended Trinity College and has studied package engineering at The University of Wisconsin. In 1941, Mr. Lockyer joined The Dumore Company as head of the shipping department, and in 1953 he also assumed the duties of traffic manager. Since 1955 he has been in charge of packaging.

Packaging Procedure

One man packages our drill and tap units at an established rate of 2.3 completed packages an hour. In other words, it takes him 0.43 hr. to assemble, fill, and seal the unit and its components in the two corrugated containers.

The packer starts the job by closing and stapling one end of each of the two boxes on Acme Steel Co.'s automatic stitching or stapling machine. Three rows of staples, with about seven 1-in. staples per row, are put in each end flap of the larger container (a total of six rows and approximately 42 staples). On the smaller container, two rows of about six 1-in. staples are placed in each end flap, making a total of four rows and approximately 24 staples. Placing the smaller container inside the large box, he puts them on the floor near the table holding the drill and tap unit, with the open end of the box facing up.

Next, he puts a die-cut pad of three layers of double-wall corrugated in the bottom (actually the stapled end) of the inner container. A cut and scored sheet of single-wall corrugated goes between the shaft housing and motor housing on the drill unit. Then, he places the 100-lb. drill and tap unit into the smaller container with the back of the unit fitting into the die-cut pad in the bottom of the box—the drill shaft pointing up. This pad helps keep the heavy drill unit from shifting during transportation.

Interior Components

When the machine is in the box, he bends down the cut and scored sheet which was placed between the shaft and motor housings so that it covers the drill motor. Then, two die-cut, single-wall corrugated

(Continued on Page 91)

TWO DIE-CUT corrugated inserts fit over chuck shaft housing to form wall of corrugated board across box—prevent lateral shifting.

SLOTTED PARTITIONS fit snugly in inner box. Part of partitioning surrounds shaft housing; rest is for small parts shipped with unit.

HOBBS CENTER-SHAFT
WEB WINDING & UNWINDING DRIVES

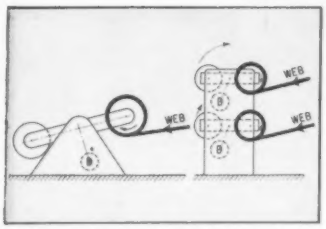


Fig. 1 — Diagram illustrating layout of two-shaft and four-shaft turret winders

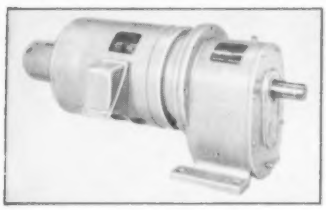


Fig. 2 — Hobbs Standard CHP Winding Drive

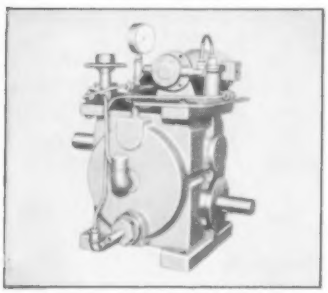


Fig. 3 — Hobbs APF Progressive Friction Winding Drive

Fig. 4 — Hobbs HG Unwind Drive

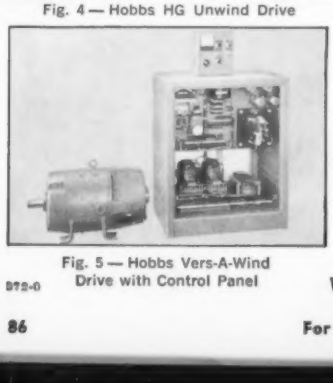


Fig. 5 — Hobbs Vers-A-Wind Drive with Control Panel

9 Types from which to Choose

Hobbs Center-Shaft Winding (see Fig. 1) is superior to surface drive winding, because it makes it possible to wind and to control tension, without friction on the surface of the material. Thus the possibility of abrasion or distortion is avoided and a roll with maximum usability or salability is assured. The various types of Hobbs drives for web winders and unwinders and their adaptability are described herewith.

HOBBS STANDARD CHP WINDING DRIVE (Fig. 2)
Preset tension is automatically maintained through the torque-speed characteristic of a constant horsepower A. C. motor. The latter slows down as the diameter of the roll increases. Its torque output increases proportionally, maintaining essentially constant H. P. — the equivalent to constant tension. May be stalled 100%. Also supplied for tapered tension. Ratio of speed change and diameter buildup as high as 1:30.

HOBBS NTJ WINDING DRIVE WITH SYNCHRONIZATION
Preset tension maintained during frequent speed changes through a 3-phase synchronizing generator, driven by main machine. Speed of generator varies with that of main machine. Frequency of output current and speed of motor varies accordingly, resulting in essentially constant tension. Unit has higher ratio of speed change and diameter buildup than standard unit, a ratio of 1:100 being obtained on some material.

Typical applications of the CHP and NTJ include calendering, coating, embossing, flexographic printing, inspecting, laminating, plastics.

HOBBS APF PROGRESSIVE FRICTION WINDING DRIVE (Fig. 3)
Preset tension automatically maintained with extreme accuracy, during a roll buildup of 8:1, through a series of overriding friction clutches running in oil. Driven from the main machine, winder changes speed in proportion and still maintains constant tension. Required torque increase is sensed directly from the web. For use with calenders, coaters, dampening machines, laminators, slitters and waxers.

HOBBS HG UNWIND DRIVE WITHOUT SYNCHRONIZATION (Fig. 4)
Tension is maintained through the torque-speed characteristic of the unit, which closely approaches constant horsepower. As the diameter of the roll decreases, the r.p.m. increases and the braking torque decreases. Hence the tension on the material remains essentially constant. Tension is adjusted by controlling the current. Used where process speeds are constant and where the unwind roll is up to speed before the HG Unwind is energized.

HOBBS HG UNWIND DRIVE WITH SYNCHRONIZATION
Designed for applications requiring stop-start and speed changes during operation. Eliminates need for manual control. A saturable reactor with necessary bias and signal control is used for synchronization. A tach generator, driven from the process machine, generates current for the reactor, which increases as the speed increases. From zero to full speed, the supply current is controlled from near zero to almost full. Once tension is set by a control knob, no further adjustment is required.

Hobbs HG Unwind Drives are used with coaters, dampeners, laminators, printing presses, friction calenders, slitters, etc.

OTHER DRIVES INCLUDE...
— Hobbs DCS Vers-a-wind Speed Control Drive (Fig. 5), Hobbs DCT Vers-a-wind Tension Control Drive, Hobbs DCTA Vers-a-wind Tension Control Drive and Hobbs DCTS Vers-a-wind Tension Control Drive. Description on request.

AIR AND MECHANICAL BRAKES
For unwind applications, alternate air or mechanical brakes can be furnished for automatic or manual control of unwind tension.

WINDING ACCESSORIES INCLUDE...
— web guides, castered bases, mandrels, "Center-Loc" core holders, conventional core chucks, special core chucks, and slitting attachments.

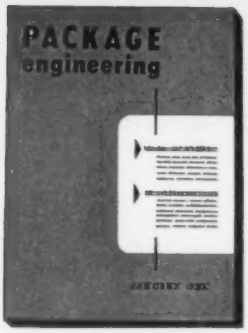
ALSO COMPLETE WINDING MACHINES, INCLUDING...
— light, medium and heavy duty single shaft; medium and heavy duty two-shaft staggered; medium and heavy duty three-shaft staggered; medium duty four-shaft staggered; two-shaft cantilevered fixed shaft and turret; light, medium and heavy duty two-shaft turret; heavy duty two-station shaftless turret; light and medium duty four-shaft duplex turret, and heavy duty three-shaft turret. Type of winding drive used is selected on basis of process specifications and application.

See Hobbs Winders at A.M.A. Packaging Exposition— Booths 702 and 800.

HOBBS MANUFACTURING COMPANY
38D Salisbury Street, Worcester 5, Mass.
Representatives in Irvington, N. J., Cleveland, Chicago, Greenville, Louisville, Los Angeles, Toronto and other Principal Cities.

WINDERS • HAND & POWER SHEARS • SLITTERS • AUTOMATIC CUTTERS • DIE PRESSES

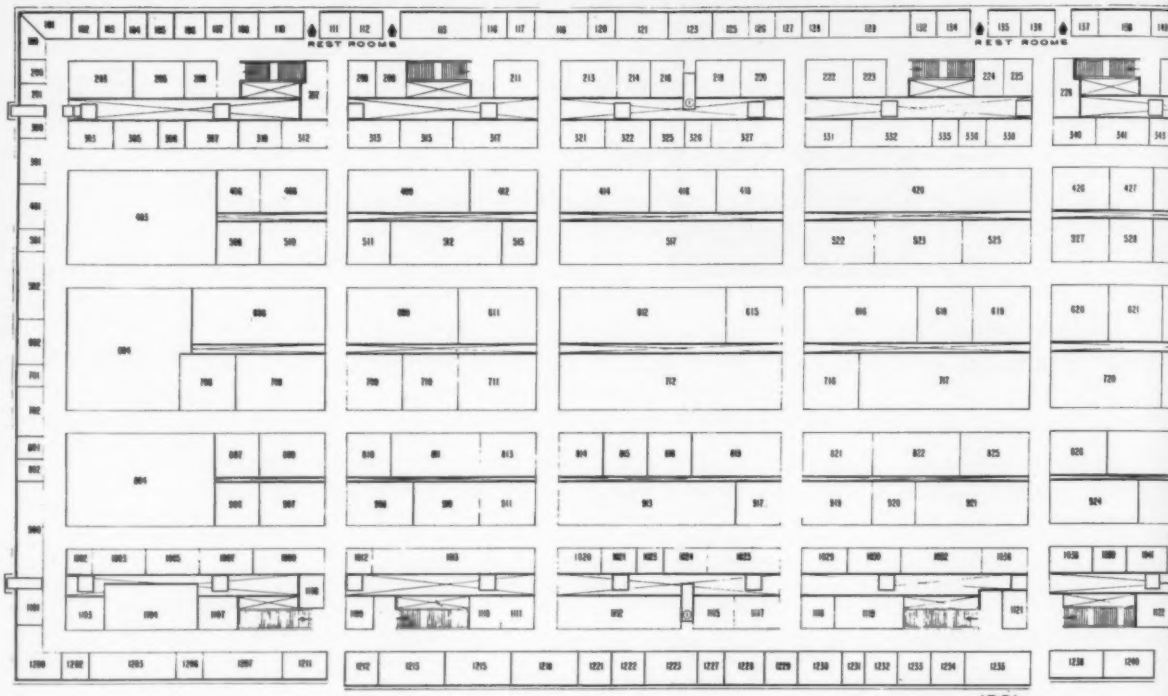
B72-0



Exhibitors

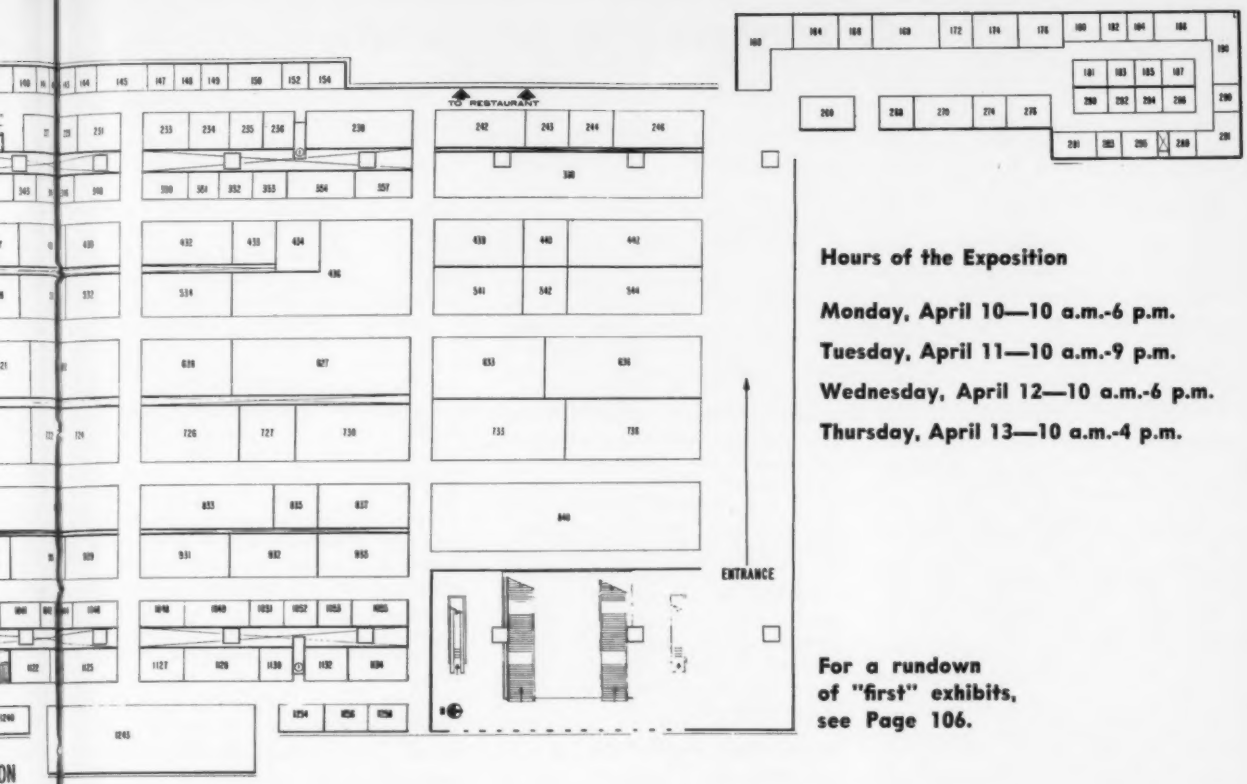
30th AMA National Packaging Conference Of 1961

EXHIBITOR	BOOTH	HOTEL
A-B-C Packaging Machine Corp.	835	Palmer House
Abbott Plastic Machine Corp.	1134	
Acme Steel Co.	246	
Addressograph-Multigraph Corp.	113	Oxford House
Air Reduction Co., Inc.	1115	
Ajusto Equipment Co.	102	Avenue
Algene Marking Equipment Co.	313	Sherman
Allen Hollander Co., Inc.	235	Sheraton-Blackstone
Aluminum Co. of America	439	
Amaco, Inc.	107	
American Can Co.	360	Sheraton-Blackstone
American Wheaton Glass Co. Div.		
Bradley-Sun Div.		
Canco Div.		
Dixie Cup Div.		
Marathon Div.		
Milk Container Div.		
American Cyanamid Co.	260	
American Excelsior Corp.	1029	
American Management Association	Registration Area	
American Partition Co.	134	Avenue
American Viscose Corp., Film Div.	837	Conrad Hilton
Industrial Packaging Div.	186	
Amsco Packaging Machinery Inc.	826	LaSalle
Anaconda Aluminum Co.	1213	Pick-Congress
Anderson Bros. Mfg. Co.	148	Eastgate
The Mark Andrews Co., Inc.	1042	
Apex Machine Co.	135	50th on the Lake
The Arabol Manufacturing Co.	529	Morrison
Armstrong Cork Co.	310	
Atlas Vac-Machine Corp.	305	
Automation Engineering Laboratory, Inc.	1222	Palmer House
Auto-Vac Co., Div. of National Cleveland Corp.	615	Pick-Congress
Avery Label Co.	227	Avenue
AviSun Corp.	168	Palmer House
Bagcraft Corp. of America	1231	
Barnes Drill Co.	1223	Conrad Hilton
Bartelt Engineering Co., Inc.	436	Palmer House
Behr-Manning Co., Div. of Norton Co.	1119	Pick-Congress
Bemis Bro. Bag Co.	242	
Better Packages, Inc.	327	Palmer House
Biner-Ellison Machinery Co.	1020	Bismarck
Binks Manufacturing Co.	303	
Bivans Corp.	515	Palmer House
Bon-R Reproductions Inc.	187	Morrison
Bostitch, Inc.	633	Palmer House
W. Braun Co.	332	Sheraton-Blackstone
Brockway Glass Co., Inc.	716	LaSalle
The Brown-Bridge Mills, Inc.	1005	Avenue
B. H. Bunn Co.	1044	
F. N. Burt Co., Inc.	1038	Drake
John Burton Machine Corp.	181	Eastgate
Carbert Div., Pneumatic Scale Corp., Ltd.	354	Sheraton-Blackstone
Carry-Pack Co., Ltd.	180	
Celanese Plastics Co., Div. of Celanese Corp. of America	627	Palmer House
Cel-Fibe Div., Personal Products Corp.	118	Executive House
Celluplastics Inc.	716	LaSalle
Ralph Chaffee & Co.	1121	Conrad Hilton
Chase Bag Co.	412	Pick-Congress
Cherrin Products Co.	1212	
Chicago Molded Products Corp.	205	
Chicago Printed String Co.	1103	
Clamco Div., Cleveland-Detroit Corp.	100	Shore Drive
The Clark-Aiken Co.	616	Pick-Congress
J. L. Clark Manufacturing Co.	1128	Drake
The Cleveland Container Co.	1048	LaSalle
Climax Products Div., The Lodge & Shipley Co.	1200	Shore Drive
Collapsible Tube Manufacturers Council	129	Ambassador
Columbian Rope Co.	144	
Comet Industries, Inc.	1007	
Consolidated Aluminum Corp.	220	LaSalle
Container Corp. of America	736	Sheraton-Blackstone
Continental Can Co., Inc.	840	Sheraton-Blackstone
The Cottrell Co.	143	
Count-O-Matic, Inc., Div. of U.S. Engineering Co.	150	
Crandall, Inc.	288	Sherman
Creative Packaging, Inc.	932	
Crown Cork & Seal Co., Inc.	432	Palmer House
Crown Zellerbach Corp.	517	Sheraton-Blackstone
Daher Co., Inc.	147	Palmer House
Joseph Davis Plastics Co.	910	Shore Drive
Delaware Barrel and Drum Co., Inc.	900	Conrad Hilton
Demuth Glass Works, Inc.	716	
Dennison Manufacturing Co.	430	Conrad Hilton
Dependable Compressor & Machine Co. Inc.	218	Ambassador West
Derby Sealers, Inc.	815	Shore Drive
Diagraph-Bradley Industries, Inc.	331	Lake Towers
Diamond-National Corp., The Gardner Div.	804	
Diamond Plastics Industries, Inc.	932	Executive House
Dispens-A-Label Devices	137	
The Dobeckmun Co., Div. of The Dow Chemical Co.	708	Morrison
Doughboy Industries, Inc.	1025	
E. I. du Pont de Nemours & Co. (Inc.)		
Cel-O-Seal and Vexar Div.	542	Bismarck
Electrochemicals Dept.	1021	Bismarck
Film Dept.	544	Bismarck
Freon Products Div. and Orchem Dept.	433	Bismarck
Polychemicals Dept.	726	Bismarck
Durable Industrial Supply Co.	281	
John Dusenbery Co., Inc.	233	
Eastman Chemical Products, Inc., Plastics Div.	612	Bismarck
Chemicals Div.	711	Pick-Congress
Eastman Kodak Co.	523	Pick-Congress
Frank W. Egan & Co.	291	Conrad Hilton
Ekco-Alcoa Containers Inc.	722	Executive House
Electronic Machine Parts, Inc.	136	Morrison
Embossograph Process Co., Inc.	103	
Emhart Manufacturing Co., Portland Div.	822	Palmer House
Enjay Chemical Co.	160	Oxford House
Erdco Engineering Corp.	807	
Eriez Manufacturing Co.	326	Palmer House
Errich International Corp.	110	Palmer House
Fastener Corp.	128	
Faustel, Inc.	185	Palmer House
Felins Tying Machine Co.	343	Pick-Congress
Fibreboard Paper Products Corp.	926	
Fife Manufacturing Co.	231	Conrad Hilton
The F. G. Findley Co.	1049	Lake Towers
Dave Fischbein Co.	1043	Palmer House
Flex-O-Glass, Inc.	701	
Food and Drug Packaging	125	
Food Machinery & Chemical Corp.	827	Pick-Congress
Hudson-Sharp Plant		
Kingsbury & Davis Plant		
Simplex Plant		
Stokes & Smith Plant		
Forbes Lithograph Mfg. Co.	908	Drake
Foster Grant Co., Inc.	1233	Palmer House
Walter Frank Organization	121	
H. B. Fuller Co.	243	Sherman
Fulton Machine Co., Inc.	288	
GPE Controls Inc.	621	
Gast Manufacturing Corp.	1100	
Gaylord Container Corp., Div of Crown Zellerbach Corp.	517	Sheraton-Blackstone
General Box Co.	312	
General Chemical Div., Allied Chemical Corp.	913	
General Research and Supply Co.	920	
A. J. Gerrard & Co.	427	
Gibbs Automatic Moulding Div., Pierce Industries Inc.	140	Bismarck
Glassine & Greaseproof Manufacturers Assn.	1013	
Globe Industries, Inc.	166	Conrad Hilton
Glo-Brite Products Inc., Polyfoam Packers Div.	1051	
The Goodyear Tire & Rubber Co.	541	
Adolph Gottscho, Inc.	821	
W. R. Grace & Co., Polymer Chemicals Div.	626	Executive House
Graeber Stringing & Wiring Machine Co.	229	
Gray Co., Inc.	911	Executive House
Great Lakes Stamp & Manufacturing Co., Inc.	268	
The Greif Bros. Cooperage Corp.	1237	Palmer House
B. F. Gump Co.	929	
Hampton Manufacturing Co., Industrial Tape Div.	236	Lake Tower
Harris-Seybold Co., Div. of Harris-Intertype Corp.	142	Palmer House
Hayssen Manufacturing Co.	357	
Haywood Publishing Co. (Consumer Packaging, Industrial Packaging and Boxboard Containers)	350	
Hedwin Corp.	709	Palmer House
The Heekin Can Co.	1107	50th on the Lake
Heidelberg Eastern, Inc.	424	Bismarck



1961
AMA NATIONAL PACKAGING EXPOSITION
EXPOSITION CENTER
CHICAGO, ILLINOIS

Heinrich Equipment Corp.	931	Bismarck
Herbert Products Inc.	184	Palmer House
Hobbs Manufacturing Co.	702	
Ideal Stencil Machine Co.	149	Sherman
Ideal Stitcher Co., Div. of W. R. Fabich Mfg. Co. Inc.	216	
Ideal Tape Inc.	117	Conrad Hilton
The Impact-O-Graph Corp.	501	50th on the Lake
Injection Molding Co.	409	
Inland Wire Products Co.	296	Shore Drive
Inpak Systems, Inc.	1215	
Intaglio Service Corp.	511	Drake
Integral Packaging Co.	1203	Conrad Hilton
Interchemical Corp., Printing Ink Div.	730	
International Eastern Co.	208	
International Paper Co.	1243	
International Staple and Machine Co.	720	
The Jackmeyer Corp.	1234	Palmer House
Janesville Cotton Mills	346	Palmer House
Jiffy Manufacturing Co.	321	
Johns-Manville Sales Corp., Dutch Brand Div.	1108	Conrad Hilton
Oscar I. Judelshon, Inc.	1132	
KVP Sutherland Paper Co.	534	
Kahlenberg-Globe Equipment Co.	1012	
Kaiser Aluminum & Chemical Corp.	1104	Sherman
The Kartridg-Pak Co.	211	
The Kendall Co., Polyken Sales Div.	406	Conrad Hilton
Kensol-Olsenmark, Inc.	1227	Palmer House
Keyes Fibre Co.	1003	Bismarck
A. Kimball Co.	1125	
Kimberly-Clark Corp.	825	Pearson
Kleen-Stik Products, Inc.	1238	
Koppers Co., Inc., Plastics Div.	907	Palmer House
Kordite Co.	270	
Frederick A. Krause Associates, Inc.	127	Lake Tower
Labelette Co.	1258	
Labels and Decals Inc.	1110	
Lassiter Div., Riegel Paper Corp.	434	
Lawter Chemicals, Inc.	316	
LectrOmatic Devices Inc.	816	
Leadpak Inc.	502	
Leewood Corp.	262	Conrad Hilton
Lever Manufacturing Co., Inc.	1218	Executive House
Lily-Tulip Cup Corp.	1240	Conrad Hilton
Lord Baltimore Press	1243	
Ludlow Corp.	921	Conrad Hilton
Manhattan Adhesives Corp.	1055	Palmer House
Marsh Stencil Machine Co.	338	Avenue
Martin Engineering Co.	1202	Union League Club
The Mead Corp.	604	Palmer House
Mercury Heat Sealing Equipment Co.	213	50th on the Lake
Metal Edge Industries	727	Pick-Congress
Michigan State University, School of Packaging	172	
Miller & Van Winkle Co.	174	Sherman
Milprint, Inc.	819	Palmer House
Minnesota Mining and Manufacturing Co.	712	Drake
Mitchell Specialty Div., Novo Industrial Corp.	1228	Shore Drive
Modern Packaging Magazine	532	Sheraton Towers
Modern Plastic Machinery Corp.	214	Palmer House
The Monarch Marking System Co.	234	Avenue
Monroe-Danford and Co.	224	Pick-Congress
Monsanto Chemical Co., Inorganic Chemicals Div. Plastics Div.	508 606	Palmer House
Morningstar-Paisley, Inc.	348	Pick-Congress
Mosstype Corp.	341	
The Multistamp Co.	351	
Mystik Adhesive Products, Inc.	809	Palmer House
Nashua Corp.	1024	Executive House
National Barrel & Drum Association, Inc.	1130	Pick-Congress
National Bundle Tyer Co.	336	
National Can Corp.	927	
National Equipment Corp.	1032	Drake
National Foil Co.	906	Bismarck
National Paper Box Manufacturers Association Inc.	138	Drake
National Starch and Chemical Corp.	724	Sheraton Towers
New Era Manufacturing Co.	229	Palmer House
New Jersey Machine Corp.	612	Drake
Nixon-Baldwin Chemicals Inc.	276	Palmer House
Norcross Corp.	283	
Ogden Manufacturing Co.	120	
Olin Mathieson Chemical Corp.	442	Executive House
Oliver Machinery Co.	1046	50th on the Lake
Ortman-McCain Co.	207	
Owens-Illinois	525	Sheraton-Blackstone
Oxy-Dry Sprayer Corp.	123	Lake Tower
Pacific Packtron Systems, Inc.	280	Sheraton-Blackstone
Pacific Plastic Machinery, Inc.	1221	
Packaging Components, Inc.	201	Executive House
Packaging Industries Ltd., Inc.	238	Executive House
Pack-Rite Machines, Div. of Techtmann Industries	317	Harrison
Pamarco Inc.	1230	Bismarck
Pan Industrial Corp.	1122	Sherman
Panta-Pak Div., The Pantasote Co.	440	
Paper Package Co.	932	
Peacock Business Press, Inc.	306	Conrad Hilton
Permacel	611	
The Pfaudler Co., Div. of Pfaudler Permutit Inc.	352	
Photomation, Inc.	104	
Photostat Corp.	290	Palmer House
Pitney-Bowes, Inc.	1030	Palmer House
Plastics World	1109	
Plas-Ties Co.	1232	



Hours of the Exposition

Monday, April 10—10 a.m.-6 p.m.

Tuesday, April 11—10 a.m.-9 p.m.

Wednesday, April 12—10 a.m.-6 p.m.

Thursday, April 13—10 a.m.-4 p.m.

For a rundown of "first" exhibits, see Page 106.

Plast-O-Craft Corp.	111	Roosevelt
Plastofilm Inc.	325	
Plastomatic Corp.	223	Sherman
Plax Corp.	717	Palmer House
Pneuma-Flo Systems Inc.	176	
Popper & Sons, Inc.	145	Palmer House
The Portland Co.	274	Palmer House
Potdevin Machine Co.	810	Bismarck
The Printing Machinery Co.	1002	Harrison
Printing Machinery Maintenance Inc.	300	Palmer House
Production Equipment Div., The Burnet Co.	226	
Pyroxylin Products, Inc.	402	Windermere
R. C. Can Co.	164	Sheraton Towers
Radiant Color Co.	183	
The Rapids-Standard Co., Inc.	609	50th on the Lake
Raymond Bag Corp.	416	Conrad Hilton
Reynolds Metals Co.	622	Bismarck
Rheem Manufacturing Co.	408	Sheraton-Blackstone
J. A. Richards Co.	154	Thunderbird
Riegel Paper Corp.	535	Palmer House
The Robins Engineering Co., Inc.	112	50th on the Lake
Rosenthal Manufacturing Co.	152	
Rossotti Lithograph Corp.	1041	
Rothchild Printing Co.	200	
St. Regis Paper Co.	403	
Scale Specialties, Inc.	284	
G. T. Schjeldahl Co.	710	Palmer House
Schroeder Machines Corp.	426	Shore Drive
Scott Paper Co., Hollingsworth & Whitney Div.	1211	Ambassador
Sealaround Corp.	1229	
Shopsin Paper Co.	801	Pick-Congress
Signode Steel Strapping Co.	924	
The Simco Co.	1111	
Simon Adhesive Products Corp.	116	Executive House
Sinclair and Valentine Co.	811	Palmer House
Skolnik Drum Co.	182	
H. P. Smith Paper Co.	1127	Pick-Congress
Soabar Co.	225	Palmer House
Sohn Manufacturing Inc.	1256	
Southern Adhesives Corp.	1049	Lake Tower
Speedry Chemical Products, Inc.	353	Ambassador East
Standard Instrument Corp., Div. of Heat-Timer Corp.	1124	
Stanford Engineering Co.	1009	Palmer House
Stein, Hall & Co., Inc.	522	Shore Drive
Sterling, Fleischman Co.	108	Pick-Congress
Stoffel Seals Corp.	1254	Conrad Hilton
H. L. Stoker Co.	209	
Strapping Materials Co.	281	Conrad Hilton
Sun Chemical Corp.	420	
Swift & Co.	418	Palmer House
Switzer Brothers, Inc.	132	
Syntron Co.	618	
The Takk Corp.	289	50th on the Lake
Technical Tape Corp.	919	Palmer House
Tee-Pak Inc.	401	
Tele-Sonic Packaging Corp.	1039	Sheraton Towers
Tetra Pak Co., Inc.	285	
Thatcher Glass Manufacturing Co., Inc.	428	Executive House
Thomson National Press Co., Inc.	706	Conrad Hilton
Tipper Tie, Inc.	917	Conrad Hilton
Tompkins' Label Service	528	Palmer House
Tri-State Plastic Molding Co.	141	Sherman
Tri-Wall Containers Inc.	222	Bismarck
Tronomatic Machine Manufacturing Corp.	203	Avenue
Union Bag-Camp Paper Corp.	636	Palmer House
Union Carbide Plastics Co., Div. of Union Carbide Corp.	733	
Union Paste Co.	1049	Lake Tower
Union Steel Products Co.	935	Executive House
United Shoe Machinery Corp.	1126	
U.S. Armed Force	190	
U.S. Engineering Co., Count-O-Matic Inc. Div.	150	
U.S. Industrial Chemical Co., Div. of National Distillers & Chemical Corp.	1112	Conrad Hilton
U.S. Printing & Lithograph Co.	804	Sheraton-Blackstone
U.S. Steel Products Div., U.S. Steel Corp.	322	
U.S. Steel Supply Div., U.S. Steel Corp.	414	Pick-Congress
Vac-Tie Fasteners, Inc.	1023	Pick-Congress
Vanant Co., Inc.	126	
The Variagraph Co.	335	LaSalle
Varn Products Co., Inc.	105	Sheraton-Blackstone
Vernon Chemical & Manufacturing Corp.	115	
Vertrod Corp.	1052	Conrad Hilton
Visking Co., Div. of Union Carbide Corp.	813	Palmer House
Web Controls Corp.	244	
Weber Marking Systems, Div. of Weber Addressing Machine Co.	344	
Webster Equipment Co.	1036	
Weldotron Corp.	315	
Westchester Plastics, Inc.	301	
West Instrument Corp.	307	
West Virginia Pulp and Paper	833	
Wetter Numbering Machine Co.	229	
Weyerhaeuser Co., Boxboard & Folding Carton Div.	1207	Sheraton-Blackstone
Silvatek Div.	1206	Executive House
S. S. White Dental Manufacturing Co.	106	Thunderbird
Wolverine Flexographic Manufacturing Co.	1053	Pick-Congress
Wood Conversion Co.	510	Executive House
Wrap-Ade Machine Co., Inc.	340	Palmer House
Wraps, Inc.	101	Bismarck
J. G. Yahnke Co.	802	Conrad Hilton
York Tape Printers, Inc.	1118	Pick-Congress

AMA conference program

American Management Association is holding its 30th National Packaging Conference April 10-12 at Chicago's McCormick Place. Following are the topics and speakers.

Monday, April 10th: 9:30-12:00.

The Power of Packaging (Assembly Hall)—W. N. Plaut, president, Lehn & Fink Products Corp., New York; Clifford H. Goldsmith, vice president, Philip Morris, Inc., New York; Frank X. Tully, general purchasing agent, Ralston Purina Co., St. Louis.

Tuesday, April 11th: 9:30-12:00.

Two concurrent sessions. *Industrial Goods Packaging* (Room No. 11)—Warren L. Serenbetz, assistant vice president, operations, Railway Express Agency, Inc., New York; Siebert Rowley, packaging specialist, General Electric Co., Pittsfield, Mass.; John C. Myers, vice president, The F. E. Myers & Bro. Co., Ashland, Ohio, Panel: *How Much Package Sell Is Practical for Industrial Goods?*—H. S. Burker, Jr., merchandising manager, Clevite Service, Cleveland Graphite Bronze, Div. of Clevite Corp., Cleveland; G. A. Rauch, manager, merchandising and sales promotion, Cutler-Hammer, Milwaukee; L. J. Clancy, supervisor, service sales department, Burroughs Corp., Detroit.

Consumer Goods Packaging (Room No. 12)—Gilbert D. Miles, manager of packaging, Toilet Articles Div., Colgate Palmolive Co., New York; G. E. Thomas, product marketing manager, Campbell Soup Co., Camden, N.J.; A. E. Downing, superintendent of finished goods, Hiram Walker & Sons, Ltd., Walkerville, Ontario. Panel: *Which Packages Succeed in the Shopping Center?*—Julian T. Barksdale, vice president, Stephen F. Whitman and Son, Inc., Philadelphia; N. L. Jones, merchandise division coordinator, S. H. Kress & Co., New York; Michael Keith, marketing director, popular price division, W. A. Sheaffer Pen Co., Fort Madison, Iowa.

12:30-2:00. Luncheon (Formal Reception room). *Packaging for the Government Today, for the Public Tomorrow*—Thomas P. Wharton, president, Packaging Consultants, Inc., Washington, D.C.

Wednesday, April 12th: 9:30-12:00.

The Profiles of Packaging, two panels (Assembly Hall). *Package Engineering and Production*—C. P. Bolton, director package research, Carnation Co., Van Nuys, Calif.; Charles J. Zusi, packaging consultant, Evanston, Ill.; Lewis J. Hayhurst, manager of packaging research, National Dairy Products Corp., Glenview, Ill.; J. P. O'Hanlon, manager-packaging, Radio Corp. of America, Camden, N.J.; M. T. Hatae, senior engineer-research, missile division, North American Aviation, Inc., Downey, Calif. *Package Distribution and Marketing*—Proctor Coffin, general sales manager, New England Confectionery Co., Cambridge, Mass.; Robert Sidney Dickens, Robert Sidney Dickens, Inc., Chicago; Robert W. Honer, merchandising manager, Heublein, Inc., Hartford, Conn.; D. J. Leeker, manager-informative packing and labeling division, Sears, Roebuck and Co., Chicago; Ralph W. Seymour, director of design, Cooperative G. L. F. Exchange, Inc., Ithaca, N.Y.

12:30-2:00. Luncheon (Formal Reception Room). *Package Developments Abroad*—Erich Ibielski, Allgemeine Elektricitats-Gesellschaft, Frankfurt, West Germany.

These are the hotels and motels where exhibitors are staying:

AMBASSADORS (East and West)
N. State and E. Goethe
SUperior 7-7200

AVENUE
1154 S. Michigan
HArrison 7-8200

BISMARCK
171 W. Randolph
CEntral 6-0123

CONRAD HILTON
720 S. Michigan
WAbash 2-4400

DRAKE
E. Lake Shore Dr. and N. Michigan
SUperior 7-2200

EASTGATE
162 E. Ontario
SUperior 7-3580

EXECUTIVE HOUSE
71 E. Wacker
FInancial 6-7100

50TH ON THE LAKE
4930 S. Chicago Beach
BUtterfield 8-5900

HARRISON
65 E. Harrison
HArrison 7-8000

LAKE TOWER
600 N. Lake Shore Dr.
SUperior 7-4700

LASALLE
LaSalle and W. Madison
FRanklin 2-0700

MORRISON
79 W. Madison
FRanklin 2-9600

OXFORD HOUSE
225 N. Wabash
FInancial 6-6585

PALMER HOUSE
State and Monroe
RAndolph 6-7500

PEARSON
190 E. Pearson
SUperior 7-8200

PICK-CONGRESS
520 S. Michigan
HArrison 7-3800

SHERATON-BLACKSTONE
S. Michigan and E. Balbo
HArrison 7-4300

SHERATON TOWERS
505 N. Michigan
WHitehall 4-4100

SHERMAN
N. Clark and W. Randolph
FRanklin 2-2100

ROOSEVELT
1152 S. Wabash
HArrison 7-7582

SHORE DRIVE
5540 S. South Shore
MIdway 3-2300

THUNDERBIRD
7501 S. South Shore
REgent 1-1250

UNION LEAGUE CLUB
65 W. Jackson
HArrison 7-7800

WINDERMERE
1642 E. 56th
FAirfax 4-6000

LUBRICATION OIL is one accessory placed in partition cells. Others are: pulley set, oiler unit, chuck key, cord clamp, drive belt, etc.

LINER keeps control panel (packaged separately) from touching sides of its box. Panel's lead wires are packed between liner and outer box.

sheets are placed around the chuck shaft housing of the unit. The two die-cut sheets form a wall or platform of corrugated all the way across the inner container and help prevent lateral shifting of the unit during handling.

The packer then puts an instruction or operator's manual, parts list, and cover plate for the back of the unit on the platform of corrugated that covers the drill motor.

Slotted partitions go in next and fit snugly inside the inner box. Part of the partitioning surrounds the chuck shaft housing of the unit; the rest of the space is available for holding several small parts that we ship along with the unit. The items that go in the open partitions are: a 1-gal., I-style can of lubrication oil; an 8-part pulley set for varying the speed of the unit; a 2-part oiler unit in an individual carton; a small folding box containing a chuck key, 10-pin plug, cord clamp, and other small parts; a drive belt; and an air hose. These accessories fit snugly in the various cells of the slotted partitioning and cannot move around during handling. The partitions not only keep the small parts from being damaged, but also, by filling the empty space above the motor of the drill unit, keep the unit from shifting and help prevent damage to the unit.

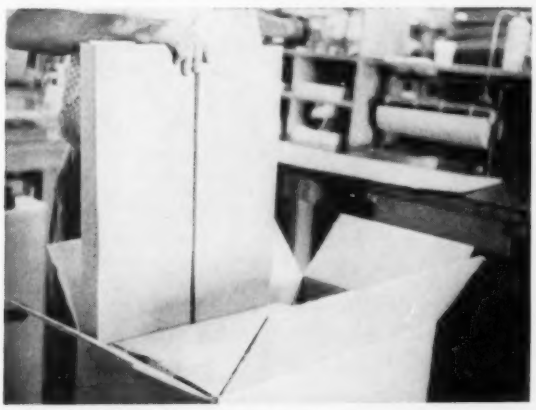
After all the smaller parts are placed in their allocated sections, two more small sections of partitioning are added to hold it together and keep the oil can, etc., from moving out of position. Then, a small sheet of vapor corrosion inhibitor paper is formed around the chromed drill chuck. The chromed chuck is lightly oiled, but we use VCI paper to assure no corrosion will take place.

Everything is now in the smaller, inner container, so the workman seals this box with one strip of gummed nylon-reinforced, asphalted kraft tape.

Control Panel Package

The separate control panel is unpacked from its original shipping container and a company decal is placed on it. Lead wires for the drill unit are attached and the control panel is put back into the shipper box. A corrugated liner fits around the control panel and holds it away from the sides of the cor-

SEALED PACKAGE containing control panel is wedged between one end of master container and container with drill and tap unit.



TWO RAT TRAPS fill remaining space—one along length of outer box, other over control panel. Now shipper is ready for sealing.

rugated shipping case. The lead wires are wound around in the space between the control panel's liner and the outside shipper.

After the control panel is repacked and sealed with a hand-operated stapler, the packer places it in the larger, outer shipping case between the smaller, inner case and one side of the outer case.

He then puts two corrugated liners or rat traps in the empty spaces caused by the difference in the sizes of the boxes inside the larger case. One liner fits along the length of the outer box and goes between the smaller case, the control panel box, and the outer shipping container wall. The other liner fits over the control panel box and fills in the top (end) of the outer shipping case.

Then, after the two liners are in place, he glues the open flaps down and seals the outer shipping case with the same type of reinforced gummed tape used to seal the inner container. So, we have a shipper sealed on one end with staples and on the other with glue and tape.

The reason we seal the ends by two different methods is to get a positive seal with the staples on that end of the container. Also, it is faster to staple the one end of the boxes automatically than to apply glue and use some sort of device to hold the flaps while the glue sets and dries. We glue and tape the other end of the shipper because this gives a better, more positive seal than stapling from the outside of the filled and closed case.

Notice that, according to the arrows pointing "up" on the case, we fill it from an end. This is done because when the box is placed with its actual end resting on the floor, it is easier to handle the drill unit for filling or placing into the case. Also, when the filled container is tipped "up" (as marked on the box), the drill unit is in correct position for transportation. Further, an end-opening container blank of this particular size is smaller than the blank of a top-opening regular slotted container of the same interior dimensions.

Why Corrugated?

We feel that with this package, we have satisfactorily answered the questions posed at the beginning of this article. One, we prevent a heavy machine from moving around in its container by using several types of interior packaging made from heavy corrugated board. Second, because the corrugated has reasonable cushioning properties, we prevent drill shaft misalignment by sufficient protective interior packaging. And last, we can package the small extra parts and keep them from shifting around in the container by placing them in the spaces provided by the slotted corrugated partitions which serve a double purpose by helping to keep the main unit of machinery in the correct position.

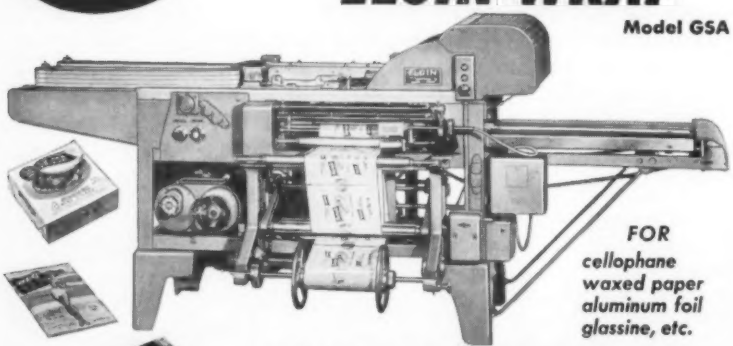
We have had no damage claims resulting from using this more economical package. The per-package cost is high as compared to some types and methods of packaging, but in light of shipping a $1,000 piece of machinery, the cost of packaging is only a small percentage of the total. And, we feel that an extra dollar or so for packaging is cheap enough insurance to guarantee that the machine will reach our customers without damage.

The cost of the two double-wall corrugated containers is about $1.60, the liners and interior packaging about $.60, and the shipper for the control panel about $.60. Total cost is approximately $2.80 for the whole package—about one-third what we paid for the wood crate and bracing that we used before.

Thus, the cost of packaging is only incidental to the protection gained and the total cost of the product. We think that it is much more important to have a package we can rely upon to prevent damage than to skimp on packaging and take our chances with damaging expensive machinery during shipment. *(End)*

Elgin
EARNS ITS WAY

"60-A-MINUTE"
ELGIN-WRAP
Model GSA



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cellophane
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glassine, etc.

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★ rapid changeover adjustments

Fully automatic, the great Elgin-Wrap is built to be a steady, swift and easily maintained producer! Designed to handle heat-sealing materials, it can also be equipped with photo-electric registration controls for printed wrappers. And the Elgin-Wrap is unequalled in its price field for speed.

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COMPANY
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R. E. Kinney is a graduate of University of Illinois with a B.S. degree in business administration. In his 38 years with Libby, McNeill & Libby he has held many positions in plant operations—assistant foreman, foreman, industrial engineer, assistant to head of industrial engineering, and plant superintendent. He is currently plant manager of the Hartford and Jackson, Wisconsin plants. Mr. Kinney is a member of Wisconsin Canners Association's legislation committee.

Three keys to glass packaging

By Ron E. Kinney,
Plant Manager,
Libby, McNeill & Libby,
Hartford, Wisconsin

We process and package seven different styles of beets in glass jars during our harvest-season operation. In packaging millions of jars annually, we have learned a few knacks about operating a fast and efficient glass packaging line.

Keys To Production

Aside from scheduling packaging materials to arrive at the right time, we think there are three "keys" to glass packaging success.

1—Get A Good Seal

First, a glass jar, as a package, is only as good as the seal obtained by putting on a cap. By watching carefully to see that no foreign material gets into the sealing area, we are reasonably sure of having good seals. If beet fragments get into the sealing area, the caps do not fit properly and you cannot get an effective vacuum seal. Because we have our two operators between the filling and capping stations act as inspectors, we make sure that no foreign material gets into the seal area.

2—Be Sure Seal Lasts

The second step in getting a good seal, and this is the second key to production, is making sure the caps stay on once they are put on the jars. To accomplish this, we control processing temperatures and pressures during the cooking cycle. By balancing internal pressure in the jars and the external pressure in the retorts, we prevent caps from loosening.

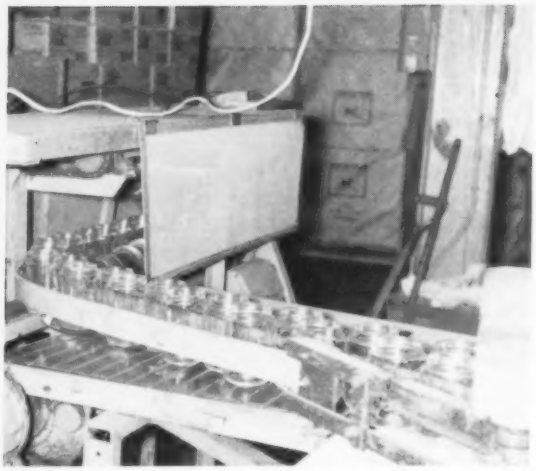
3—Use Quality Control

The third key to accomplish quality packaging in glassware is quality control. We have a four-phase program designed to maintain quality of our finished packages.

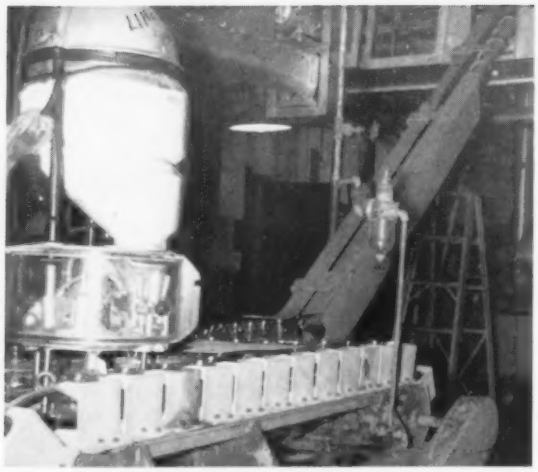
1. We inspect all the glassware as it comes into our plant. This keeps jars with nicked or chipped rims off the line and helps us to get a high percentage of good seals with the caps we use.

2. We watch our processing operations carefully to assure that

Many knacks help to achieve top peak-season production of vacuum-packed foods in glass. Mr. Kinney stresses three techniques: (1) getting a good seal, (2) keeping the seal, and (3) constantly checking quality. Close scheduling of supplies and a well-operated line are also necessary when you must package a year's stock of processed beets in 50 to 60 days, without sacrificing quality.



EMPTY JARS move from unscrambler (right foreground) to powered auger-type lowering device (left foreground) which guides them to cable-type conveyor below ceiling of first floor packaging area.



SECOND AUGER-TYPE DEVICE (right background) brings empties downward and feeds them into air cleaner (center foreground). Jars then move on to filler (extreme left) to receive salt.

caps will not be loosened and the vacuum in the jar destroyed. The majority of this control occurs during the cooking of the beets under pressure.

3. The third phase of quality control is testing the product. Flavor of beets, count, size, and coloring are checked. The weight of the filled jar and the jar itself is also checked to see how well it stands up under the rigors of high-speed processing.

4. Another step for controlling quality is testing for proper vacuum in the sealed container and visual inspection for clean, straight, tightly applied labels and whole, uncracked, or unchipped glassware at our case packing station.

Peak-Season Demands

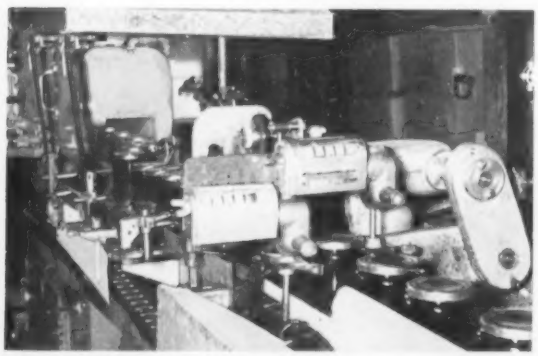
One of our major problems is the scheduling of incoming packaging materials to meet this peak-season demand. We must have enough glassware at the plant, at the right time, to allow us to pack our year's output of beets in 10 to 12 weeks. We order our glassware so that it will arrive at our plant at the same time the first beets start coming in, which is usually around the first or second week in August. Then we plan other delivery dates to meet the *daily* demands of our packaging lines for the balance of the season.

We package two sizes of whole beets (12- and 25-count/jar), pickled, Harvard, sliced, diced, and crinkle-cut beets at various production speeds, depending on the style of beet, in one glass jar or bottle size and on one packaging line.

Getting Jars To Line

Glassware comes into our plant, which is built into the side of a hill, from railroad cars on a siding adjacent to the second floor of the plant. We order approximately one carload of glassware for a day's production and use it as soon as it arrives.

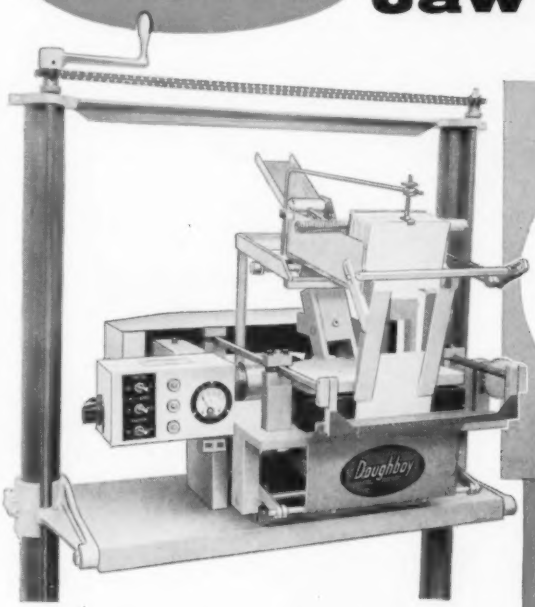
By using the boxcars as a "warehouse," we save valuable storage space within our plant. In other words, we run empty jars directly from the boxcars through our pack-



CODING DEVICE marks caps of filled and capped jars as they emerge from capper. Counters automatically register production count.

JARS GO FROM LABELER at rate of 200/min. to revolving turntable where operators inspect them before placing them into shippers.

Doughboy MODEL JSL Automatic Jaw Sealer-Labeler



The Doughboy Model JSL is designed to seal, imprint, punch holes or to code by embossing all in one process. It handles each operation efficiently, neatly and economically.

In addition to your inquiry on the Model JSL we invite your request for engineering information on a complete Doughboy System for solving your individual conveying, sealing and packaging problems.

Ask Doughboy Customers

William S. Barry of the Bloomer Candy Company, Zanesville, Ohio, says, "We are proud of the neatness and sales appeal this machine gives our bags, but of greater emphasis is the faster production we have achieved by its outstanding performance.

"By using the JSL in conjunction with your Model DB2 Double Belt Conveyor . . . it is possible for us to maintain an average output of 25 to 28 sealed bags per minute. We are confident this will result in a sizable labor savings."

DOUGHBOY INDUSTRIES, INC.
Mechanical Division
New Richmond, Wisconsin

Featuring an Efficient, Positive Coder-Imprinter

The coder-imprinter on the Model JSL solves a problem that has plagued the industry for years. Every label is imprinted without a miss. Every imprint is sharp and clear. There is no pile up of ink, no smear, no offset. Labels applied and imprinted with the JSL add to the attractiveness of the package.

IT IMPRINTS INGREDIENTS

The JSL coder-imprinter is ideal for printing lists of ingredients or other vital information. Even lists that require several lines of type are imprinted clearly.

IT CODES AND DATES

Coding and dating are important in the food and candy fields where the manufacturer, the wholesaler and the dealer must be concerned with the movement of fresh merchandise to the consumer.

IT SIMPLIFIES LABELING

The JSL coder-imprinter enables many manufacturers to simplify their labeling problems by using a standard label and imprinting these labels with trade names, product names, or weights as the packages are sealed.

aging operation as soon as they come into our plant and use our inplant warehouse space for filled jars instead of empty ones.

A lift truck removes the empty jars, which are packed in individual corrugated reshippers, from the railroad car to an unloading station on the second floor. Two men open and turn over the reshipper cases and dump the glassware on a Standard-Knapp unscrambling machine. A powered conveyor moves the jars, now in a normal, upright position, to a powered auger-type lowering device which guides them down to a moving cable with side rails which runs below the ceiling of the first floor packaging area. As the jars move along this cableway, they come to a second lowering mechanism which feeds them directly to the packaging line.

The empty corrugated reshippers (175-lb.-test, A-flute) are gravity fed down a roller conveyor to the case packing station on the first floor.

Now, the jars move through an air cleaner which inverts them, blows out any dust or lint from the shipping cases, and rights them for feeding into the filling operation.

Hand-Pack Filler

As the jars move into our FMC hand-pack filler machine, an automatic salt dispenser weighs and puts 75 grains of salt in each jar. Next, the jars are half filled with hot, softened water (which runs continuously from a soft water tank through a pipe line) as they move under the spout of the pipe line to dissolve the salt.

Operators on the second floor feed the blanched and cut beets from carts into a 6-in. diameter pipe which takes them by gravity down to the filler hopper. The beets move out through this hopper onto the powered turntable of the filler.

The turntable has openings around the outer edge which are the same size as the neck of the jars. As the turntable revolves, jars index under the openings and two men (wearing rubber gloves) push beets through the openings and into the jars indexed underneath. All our jars have a 17-fl. oz. capacity with a 70 mm. GCMI finish. We fill to volume and to a 16-oz. net weight.

We fill at speeds from 130 to 200 jars/min., depending on the style of beets we are running. The difference is mainly due to the different handling characteristics of sliced and whole beets. For example, the round, whole beets roll over one another more easily than the slices which tend to "stick" together. Thus, the whole beets fall through the filler holes faster and easier.

We use this hand-filling machine because other types of fillers are not suitable for handling solids such as our sliced beets. We cannot run sliced or whole beets through a piston-type filler, for example, because it would mash or cut up the beets going through it.

Fill Height Adjusted

As the jars come out of the filler, an operator wearing rubber gloves pushes the beets down into the jar to make sure no beets stick up over the jar edge or finish. If necessary, she takes extra beets out of the jars if they are too full.

Then the jars move under an automatic White Cap headspacer which pushes the beets down into the jar to the desired fill height. If the fill is below the shoulder of the jar, a second girl adds beets to bring the fill up to the correct level.

When the fill has been adjusted to the right height, more hot, softened water is added to the jar to fill it right up to the top. Then, it moves under a second headspacer and some of this water is displaced to adjust the contents to the final correct fill height.

Technique Of Capping

A conveyor moves the jars along to our automatic capping machine. Just before each jar gets its metal cap put on, live steam is shot

Always Dependable *Since 1907*

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SILICONE NEWS from Dow Corning

Such Sweet Parting

Silicone Coatings Speed Unpacking, Reduce Waste, Step Up Production

Dates, candy, sweet rolls . . . will always be sticky, but that's no problem in packaging now that Syl-off® coated papers are readily available. Syl-off silicone paper coatings provide stickproof surfaces to a wide variety of food packaging materials and in-plant processing aids — kraft, parchment, glassine, boxboard, drums, bags, interleaving liners — permit quick, easy and complete removal from even the stickiest food products.

Food grade Syl-off coatings don't migrate, don't contaminate, don't transfer . . . and the use of paper coated with these silicone anti-adhesives to package foods is in compliance with provisions of the Food Additives Amendment of 1958.

For labels, too. As backing for labels, price stickers, banners, decals, and similar pressure-sensitive items, Syl-off coated paper peels free with ease — eliminates tearing, cuts waste, saves time.

Benefits you . . . whether you be packager or user. Syl-off coated papers come away cleanly and easily from the stickiest products — save time and money — help create repeat sales. Everyone gains.

What's your sticky problem? Will Syl-off solve it? Write today for more information and complete list of Approved Sources for Syl-off coated wrapping papers, bags, containers, drums, and processing aids with Syl-off coatings. Dept. 6416.

For most efficient foam control in food processing, it's Dow Corning Silicones, too. Send for a copy of the new manual "ABC's of Defoaming".

first in silicones

Dow Corning CORPORATION
MIDLAND, MICHIGAN

ATLANTA BOSTON CHICAGO CLEVELAND DALLAS LOS ANGELES NEW YORK WASHINGTON, D. C.

through a nozzle and into the headspace (the empty space between the product and the top of the jar) to displace the air. After the cap goes on, the steam condenses; this creates a vacuum in the jar. The second headspacer makes sure enough water is displaced out of the jar to allow us to draw an adequate vacuum in each jar (about 15 in. mercury) by condensing steam in the headspace.

We heat the caps to about 200°F. before twisting them onto the jars. This softens the flowed-in rubber gasket on the inside of the cap just enough to take an impression from the jar finish or rim. We get our best seals by heating the caps so an impression will be made in the rubber gasket when the cap is put onto the jar.

Each "twist-on" cap is applied with just enough torque to leave at least 0.014 in. of the rubber gasket between the glass and the metal of the cap. That is, after the cap is on the jar, there is at least 0.014 in. of rubber between the glass and the cap all the way around the top or rim of the jar.

Move On To Cooker

As the jars move out of the capper, a White Cap coding unit puts an impression on the cap and the jars move along to the end of the filling line.

Here, a workman places a large steel basket or "crate" (which has a movable bottom) over a hydraulic lift or ram which comes up through the floor at the end of the filling line. The ram automatically raises the bottom of the basket up to a level even with the end of the packaging line. Attendants then push filled jars onto the basket bottom manually.

Then, the filled bottom layer of the basket is lowered the height of one jar, an attendant places an aluminum divider over the top of the first layer of jars, and the men push another layer into the basket. Four layers of 90 jars each are pushed into the basket in this manner. When filled, the basket is moved by an overhead conveyor to our retort cookers which pressure cook the beets right in the jars.

We have to regulate the cooking pressure carefully. If too much pressure builds up in the retorts, the caps bow inward slightly at the center and the seal along the gasket loosens. If there is not enough pressure in the retorts during the cooking cycle, the caps pop off because of the pressure generated inside the jars by the cooking heat.

Likewise, we have to regulate pressure during the cooling cycle to prevent either the internal pressure in the jars or the external pressure in the retorts from loosening the caps. If the caps do loosen, the vacuum dissipates and the container loses its effectiveness in keeping the beets from spoiling.

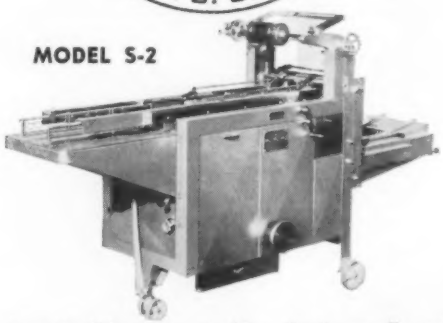
We use chemically softened water in the cooking process to keep lime deposits from forming on the jars. Hot, hard water forms these objectionable deposits on containers when they cool. Cold water or hot, softened water does not do this.

Steps Before Labeling

After the attendant takes the baskets out of the retorts, the filled baskets move along a powered overhead conveyor through a cooling canal which brings the jar temperature down to 95°F. and they move on to the unloading station. We cool the jars to this temperature quickly to avoid having to store them hot which might cause the beets to spoil.

We remove jars from the baskets in just the opposite manner or in reverse of the way they were put in. The hydraulic rams pushes the top layer of jars up to the level of the Rosenberg unscrambler. An operator loops a leather belt-type device around this top layer. He fastens the loose end of the belt to a revolving mandrel, pushes a lever which winds up the slack end of the belt onto the mandrel, and this pulls the belt toward the unscrambler. The belt, in turn,

SCHOOLER WRAPMASTER MFG. CO.



Here's the Automatic Wrapping machine they're really going for — because of these exclusive features — and many more:

- **Completely adjustable — no change parts;**
- **One Minute changeover time;**
- **Mobile — wheel it around — use it anywhere;**
- **Makes seamless wrap — no back side.**

Equally versatile is our new Automatic Banding Machine using cellophane, wax or foil and our complete line of Semi-Automatic Wrapping Machines for the overwrapping of cartons, trays, irregular shapes, etc.

For complete information, write or phone or wire.

SCHOOLER MFG. CO. 11341 San Fernando Road PACOIMA, CALIFORNIA

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DAVIS BUTYRATE

focuses attention on Ansco cameras!

Under a sparkling bubble of Davis Butyrate, Ansco has assembled everything you need to start shooting! This cleverly designed package has specially molded niches for bulbs, film and camera. Plaxall, L. I. City, N. Y. designed the package with a sliding plastic bubble that permits removal for easy inspection, and replacement of camera and accessories. Davis Butyrate was selected in order to achieve the combination of complete brilliance and clarity, together with the rigidity and precision required to pressure-form the large compartmented bubble.

Davis extruded acetate and butyrate sheets, rolls and film come in all gauges — transparent, translucent, or opaque — and are ideal for vacuum and thermo-forming.

We have been supplying the packaging industry with plastic materials for over 40 years, and we would welcome the opportunity to help packagers with their problems. Let us send you a brochure on our facilities and the wide range of plastics we produce, together with their properties and applications.

PRODUCT BY ANSCO, PACKAGING BY PLAXALL, L. I. CITY, N. Y., EXTRUDED BUTYRATE BY JOSEPH DAVIS PLASTICS COMPANY

JODA

Joseph Davis
PLASTICS COMPANY
430 Schuyler Avenue, Kearny, N. J.
Phone: WYman 1-0980 New York: BArclay 7-6421

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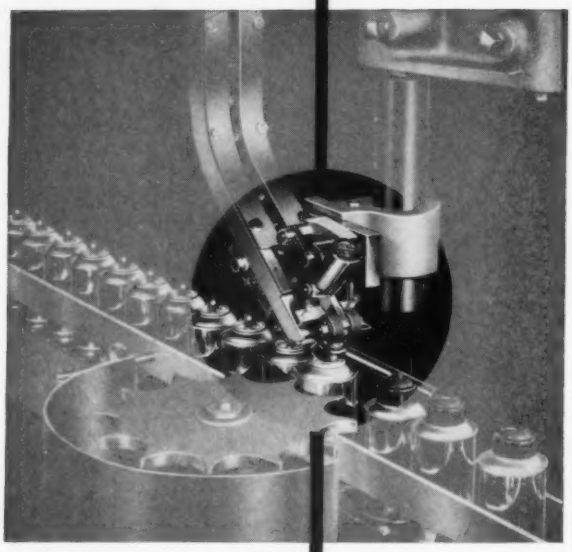
CONSOLIDATED H-O-F CAPPER SPEEDS PRODUCTION... PROTECTS PROFITS...WITH NEW SORTER CHUTE ESCAPEMENT



UP TO 300 METAL OR PLASTIC OVERCAPS A MINUTE!

Now you can have bigger profits through faster production on your capping lines. Consolidated's H-O-F Capper with new sorter chute and chute escapement produces up to 300 metal or plastic closures a minute for extra profits and increased efficiency!

Secret of this increased speed is Consolidated's exclusive escapement mechanism that automatically holds back overcaps until container is in position . . . then rolls each closure on carefully and precisely. Free of jam-up or missed container.

The H-O-F Capper is easily adaptable for every type of fitment specially designed for the Food, Cosmetic and Drug industries. Quick, easy changeover from one size container to another.

Find out how the H-O-F Capper can speed your capping lines and protect profits in drug, cosmetic and aerosol fields. Write Sales Manager:

CONSOLIDATED PACKAGING MACHINERY CORP.

1400 West Avenue • Buffalo 13, New York

A Subsidiary of International Paper Company

pulls the top layer of jars off the aluminum divider and onto the unscrambler. Then, the next layer of jars is brought up to the right level, the same operator removes the aluminum divider, and this layer is pulled out of the basket in the same fashion.

Removing Duds

From the unscrambler, the jars move along a powered conveyor past air jets which blow excess water from the cap and shoulders of the jars, through a drying tunnel, under a cap buffer, and on to a "dud" detector. Our White Cap dud detector shows whether there is a sufficient vacuum in the jars to preserve the beets.

It works like this: A metal brush extends downward from the detector unit. When there is enough vacuum in the jar, the cap bows inward slightly and the brush does not contact the metal cap. If there is a poor vacuum in the jar, the cap bows up slightly, the brush contacts the cap, trips a Micro Switch, and a mechanical arm removes the jar from the line.

The jars deflected from the line by the detector are opened and inspected. If the finish on the jar is nicked or chipped, or if the jar is cracked, the quality control inspector discards it. If the jar is all right, we wash it out and run it through the filling and processing operation again. We throw out the beets and jar caps from all defective jars because we cannot process them twice.

After the jars pass through the dud detector, they move at 200/min. through our Standard-Knapp labeling machine and then to a revolving turntable. Three operators inspect the jars for loose, marred, or torn labels; lime deposits or water spots, or other imperfections. These same people place the jars by hand in the corrugated shipping cases in which they originally came. The filled cases then move through our Ferguson case sealer and are removed by a lift truck to our storage area prior to shipment. *(End)*

NEW

TRIPLE REINFORCED

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GUMMED TAPE

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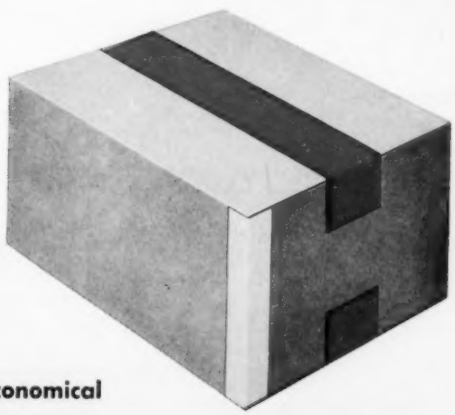
- Extra flexibility for shaping around corners of box saves application time
- Extra adhesion from new improved gumming
- dust-proof
- moisture repellent

New Glas-sert gives extra protection to insure that merchandise will arrive safely.

New Glas-sert provides a better surface for printed sales messages.

New Glas-sert is the most effective and most economical closure in existence. Ask for a sample today.



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For more information circle No. 267 on Reader Service Card

A POLYETHYLENE SHEATH (0.002-in. thick material) protects each pallet load of packaging supplies during temporary outdoor storage. Visible damage to covers was negligible—only 7 out of over 200 ripped off skids during hurricane. Lift truck operates on smooth parking lot surface as readily as in warehouse. Storage in "blocks" probably helped prevent wind damage.

You need less roof than you think

By Roger W. DeMay,
Department Manager—Shipping, Receiving and Warehousing,
Chesebrough-Pond's, Inc.,
Clinton, Connecticut

Have you ever waited out a hurricane as it was tearing through your packaging supplies—especially those stored outdoors? This is what the people at Chesebrough-Pond's did when Hurricane Donna struck last fall. Noting that she did not damage the supplies, Mr. DeMay gives an account of why and how the company had supplies outdoors.

An emergency method of outdoor storage of packaging supplies, which we improvised, survived Hurricane Donna with its 100-m.p.h. wind. Further, the storm tore only seven of the 0.002-in. polyethylene sheaths from skid loads, and there was no damage to our supplies. Thus, we consider this temporary method of storage successful!

How Problem Started

Production of toiletries and cosmetics for the consumer market is highly cyclical and precedes the major buying seasons, i.e., Christmas, Easter, and spring and fall fashions. Just preceding the peak buying periods, the manufacturing department is under great pressure to meet the market requirements in a short period of time. The heaviest burden is the need to have available in storage the thousands of components required to meet the production schedule.

This was our situation in August, 1960 when preparation for Christmas sales required the build-up of supplies that we needed for the October production peak. A series of packaging changes to be put into effect for the holiday trade, new assemblies, new products, and new promotion magnified the problem of caring for all these supplies. We did not have enough warehouse space in the plant to hold all neces-

sary supplies. An immediate solution of this problem was imperative.

Points To Watch

Analysis of the type of space needed was relatively simple. Our products are high-volume items, with many components that call for easy accessibility. We must produce a number of sub-assemblies before the rush period and hold them for the final assembly.

Our build-up of material "in process" is a constantly changing quantity; it is increased by new production and reduced by draw-away for final assembly. Furthermore, much of the material in process is of a type which we cannot stack with a lift truck. Thus, its occupancy of floor space ties up valuable warehouse cubic capacity.

We saw that any solution of the problem would need attention to these points:

1. It would be impractical to build additional warehouse space because of cost and long lead time.
2. Space must be easily accessible from the main plant.
3. Cost should be less than comparable commercial warehousing charges including transportation cost.
4. Occupancy of such additional warehouse facilities would not exceed ten weeks.

Four Ways To "Cover"

It was immediately apparent that to meet those requirements the only solution was to use the large parking lot that adjoins two sides of our plant. To avoid the folly of exposing pallet loads of packaging supplies to the weather, we sought some sort of cover. We considered four types:

1. We could erect shelter housing or a simple shed roof with no sides, but the required lead time to do it plus the fairly high cost in relation to usability ruled this one out.
2. We considered tarpaulin covers, but the awkwardness of handling them ruled them out except as a last resort.
3. We looked at air houses, pioneered by the government, as another possibility. These are rubber-coated fabric hemispheres expanded by low air pressure from a blower. They have several advantages in that they are quick to erect, provide a clear span of floor space, and can be erected on any sort of terrain. The disadvantages of adapting them to our needs were: relatively high initial cost; long lead time for delivery; and high moisture level inside the air shelter.
4. Final solution to our problem was very simple. Avoiding a roofed space, we developed a sheath designed to fit each individual pallet load of supplies. We chose 0.002-in. polyethylene for the sheath material. Each sheath had a square end with heat-sealed seams for strength and weather tightness. We got these in less than a week, and we were in business.

Making The Move

We rented an outdoor lift truck to move material to the parking lot. We sheathed each pallet load and gathered and taped (with filament tape) the bottom of each sheath. These were loose enough to allow air to circulate through the skids, thus substantially reducing moisture entrapment and build-up.

Within a very short time, we

Packaging materials stacked outdoors under improvised shrouds withstand battering of Hurricane Donna

MORNING AFTER HURRICANE DONNA, with 100-m.p.h. winds and rain, tore through this emergency outdoor storage in paved parking lot. No damage occurred to packaging supplies.

moved 250 pallet loads outside, and sheathed and stacked them two high. We stored only glass and plastic containers outside because of the possibility of moisture absorption by other materials such as chipboard or corrugated board. This move produced immediate relief in our warehouse area, thus smoothing operations considerably.

One of the biggest doubts in our minds about this program concerned the durability of the sheaths under adverse weather conditions. We got our answer to this question dramatically when Clinton caught the full brunt of Hurricane Donna. Its 100-m.p.h. gusts and rain ripped through our outdoor warehouse.

Net loss: just seven sheaths ripped off the skids—out of more than 200 stored there. And no contents were damaged whatsoever, although their boxes got wet. This convinced us that our emergency warehouse was practical. The illustrations are from photos taken on September 13, 1960—the morning after the passage of the hurricane.

Roger W. DeMay is a graduate of University of Connecticut where he majored in industrial organization and management. He was packaging department manager for The J. B. Williams Co. before joining Chesebrough-Pond's in 1958. He was department manager of cream and lotion, and lipstick and powder production before assuming his present position. Mr. DeMay is a member of Middlesex Industrial Management Club.

Expect Greater Use

Total cost of storage space on an annual basis for this project is less than $0.50/sq. ft. While this figure is somewhat less than the cost of inside warehouse space, the usability of the system is limited to the late spring, summer, and fall months.

We now have further uses for these sheaths. For one, we cover labeled or marked drums for their protection when stored outdoors. Also, we now store surplus, unused pallets outdoors and cover them with these sheaths to protect them from weathering during the winter months. We estimate the protection adds 10 per cent to their useful life.

We plan to expand this outdoor storage program in 1961 and utilize the lessons we learned in 1960 to improve on the idea. While a 0.002-in. thick sheath is practical, it has a tendency to rip after exposure to the weather for eight or nine weeks. We think a slightly heavier gauge of polyethylene will reduce this tendency.

In time we expect to devise new applications of this system of outdoor storage of packaging supplies. It seems an ideal method of gaining flexibility in seasonal warehouse operations—assuming a hard surface (say, a parking lot) is available. *(End)*

NEW! Portable Electric Bag Closing Machine

HERE is a handy little machine that makes bag closing fast, easy, and economical. It is recommended where operations are limited or intermittent and do not justify installation of large, high production machines.

LIGHTWEIGHT—9½ pounds. Carry it anywhere. No installation; requires only an electrical outlet.

POWERFUL—Direct drive motor with thumb control button. Exclusive top and bottom feed for greater power and production.

VERSATILE—Closes bags made of cotton, burlap, jute, multiwall paper, laminated paper.

SAFE—Anyone can operate it. No special training required. Comes with shoulder strap or can be obtained with overhead suspension. Send for descriptive literature.

FINEST QUALITY 487

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SAVE UP TO 83%
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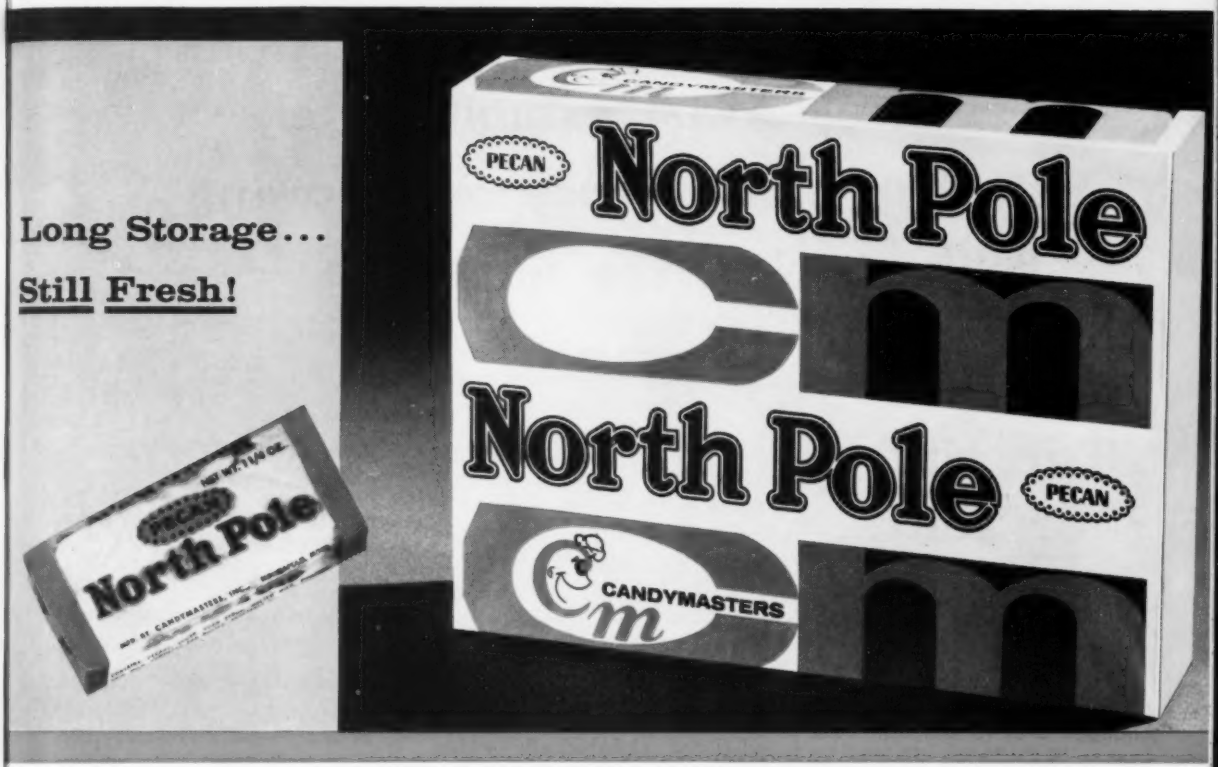
FRESH



Problem

Pecan North Pole Candy Bars are a seasonal item. Sales are high during the summer, drop off during the fall and winter. At the end of a season, a wholesaler often has a stock to carry over until spring. During past winters, extreme temperature changes tended to dry out the cellophane wrapper which protected the 24-bar carton. The cellophane became brittle and cracked at the corners causing the candy to dry out and lose flavor. As a result, the manufacturer was forced to accept a substantial return of unsaleable merchandise.

Solution

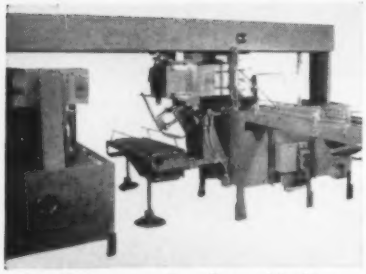
Western-Waxide tested many overwrap materials. Regular waxed paper did not provide the desired long term storage. Heavier cellophane was too expensive. Then *Crown-Cote®* (with Strike-Thru Tissue) was tested. Candy, protected by *Crown-Cote,* was subjected to lengthy storage tests. These tests revealed no noticeable loss of freshness. This new protection has virtually eliminated returns of unsaleable candy. In addition, it has enabled the company to sell this perishable product in distant marketing areas.

Western-Waxide . . . turning problems to profit through research

CROWN ZELLERBACH

Western-Waxide Division

Headquarters, 2101 Williams Street, San Leandro, California
In Canada address product inquiries to Crown Zellerbach Limited, Vancouver, B.C.



The Systemation Case Set-up Machine

Sets up and Positions Cases for Top, Side or End Loading

Handles case sizes from 9" x 6" x 3¼" to 14" x 16½" x 11".
Changes over to different case sizes in less than 15 minutes.
Operates with any standard case loader.
Adapts easily, inexpensively to existing equipment.
No-case safety shutoff and Fail Safe controls.
Sets up one case while another is being loaded.
Floor space—9'3" x 11'2½" x 5'4".
Average operating speed—11 cases per minute.

Write for complete data and specifications

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Division of Geo. J. Meyer Manufacturing Co.

AMA exhibitors tell what they are showing "for the first time"

In developing background material about this year's National Packaging Exposition, PACKAGE ENGINEERING asked exhibitors what they are showing for the first time. Some 120 reported new developments in containers, materials and machinery which they are unveiling at this show. These exhibitors appear below, classified by containers, materials and machinery, and listed alphabetically within each group.

Details of the exposition and conference appear in the center spread (Pages 87-90). It includes an alphabetical list of exhibitors with booth numbers and hotel headquarters; floor plan of McCormick Place; conference speakers and topics; hotel addresses and phone numbers.

CONTAINERS

American Can Co., Bradley-Sun Div.—
Seamless pressure can (of aluminum) utilizing piston principle to separate product from propellant.

Anaconda Aluminum Co.—
Spiral-wound foil can using laminated aluminum foil instead of sheet aluminum or tin plate steel.

Chase Bag Co.—
Moisture-resistant multiwall shipping sacks with polyethylene intermediate free ply.

J. L. Clark Manufacturing Co.—
Can with revolving plastic sifter cap.

The Cleveland Container Co.—
Easy-opening aluminum top can.

Delaware Barrel and Drum Co., Inc.—
5- and 15-gal. throw-away containers (cylindrical and rectangular); tote barrels; linear tanks.

Forbes Lithograph Manufacturing Co.—
Top grip and bottom grip carrier; beer carrier; display shipping units.

Gibbs Automatic Moulding Div., Pierce Industries, Inc.—
Rectangular ½-gal. container.

Hedwin Corp.—
5- to 15-gal. containers with plug screw cap and FlexSpout closures.

KVP Sutherland Paper Co.—
Laminated carton for detergents with outside wax wall structure.

The Mead Corp.—
New poultry container.

Milprint Inc.—
Boil-in pouch reverse printed without being vulnerable to delamination.

Packaging Components, Inc.—
Box insert, tray or platform, satiny in appearance.

Plastofilm Inc.—
Snap-on covers for plastic, board or aluminum food trays.

Plastomatic Corp.—
Hermetically sealed polyethylene container with film cover laminated of polyester, saran and polyethylene.

R-C Can Co.—
Fibre bodied, foil-lined can for frozen fruit juices.

Raymond Bag Corp.—
Multiwall bag formed around polyethylene tubing.

MATERIALS

Allen Hollander Co., Inc.—
Two-way dispenser for roll or fanfold pressure-sensitive labels.

Avery Label Co.—
Liquid pressure-sensitive adhesive in an aerosol can; automatic labeler with imprinter attached.

The AviSun Corp.—
Oriented polypropylene film.

Behr-Manning Co.—
Rayon strapping tape; carton closure tape.

Cel-Fibe Div., Personal Products Corp.—
Multi-layer bonded wadding.

E. I. du Pont de Nemours & Co.—
Nine new and improved cellophanes.

Ekco-Alcoa Containers Inc.—
Cryovac heat shrink cover of polyethylene stretch oriented in two directions.

General Box Co. —
Molded expandable polystyrene foam for interior packaging.

Hampton Manufacturing Co.—
Double-faced cloth tape; double-faced paper tape.

Ideal Tape, Inc.—
Printable flat-back tape available in color.

Interchemical Corp., Printing Ink Div.—
Carton inks for letterpress and offset.

Janesville Cotton Mills—
New designs of molded rubberized hair.

Johns-Manville—
Colored flat-back paper packaging tape.

Koppers Co., Inc.—
Low-density polyethylene film.

Kordite Co.—
Oriented polypropylene film.

Leewood Corp.—
High-density polyurethane foam.

Minnesota Mining and Manufacturing Co.—
Application of paper chemical to bleached and unbleached kraft.

Nixon-Bladwin Chemicals Inc.—
Extruded, rigid vinyl sheeting.

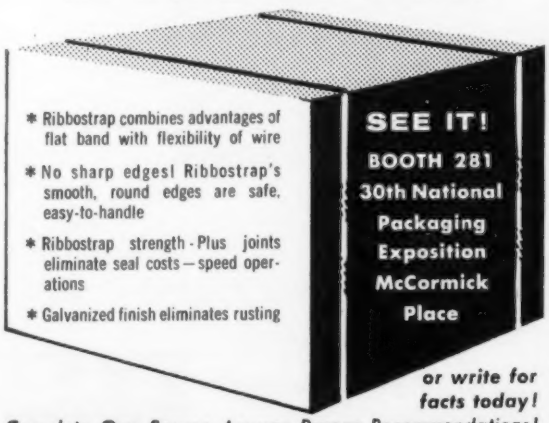
Shopsin Paper Co.—
Polished silver and polished gold

(Turn page)

NEW RIBBOSTRAP (REGD)

SAVES UP TO 30%

Over Many Sizes of Flat Banding . . . Compare with your per ft. cost of ¾" Banding


* Ribbostrap combines advantages of flat band with flexibility of wire
* No sharp edges! Ribbostrap's smooth, round edges are safe, easy-to-handle
* Ribbostrap strength-Plus joints eliminate seal costs—speed operations
* Galvanized finish eliminates rusting
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The pre-assembled cardboard partitions we supply . . . custom-made to your exact specifications . . . can solve your packing problems — and reduce cost! In our large plant, devoted exclusively to the production of cardboard partitions, we can fill orders fast — on time, and as specified — at a price that is always right!

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Circle No. 273 on Card

Waldorf knows Packaging

FOR THE RETAILER

Waldorf has originated many packaging features to facilitate opening, pricing and merchandising at the retail level.

Waldorf beer cartons have the strength needed to stack them safely in massive store displays. Thirst-appealing designs are faithfully reproduced in brilliant colors.

Waldorf created this merchandising package for a special premium offer. This package "sells" and firmly holds premium. Result: more sales for Adorn by Toni.

It packs, it stacks, it sells — new "low-profile" cereal tray designed by Waldorf gives Ralston good display on sales message AND product package.

Waldorf knows how to design and make packages and cartons that retailers can **identify quickly, open easily** and **handle rapidly.** For **better** packaging at a saving, write or phone Waldorf today. Remember, Waldorf's packaging experience can save you money.

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foils laminated to paper tag and carton board.

Simon Adhesive Products Corp.—
Pressure-sensitive materials using metallized polyester and polyester/vinyl laminates.

Varn Products Co., Inc.—
Non-offset spray powders and solutions.

Visking Co. Div., Union Carbide Corp.—
Polypropylene film.

Weyerhaeuser Co., Silvatek Div.—
Use of paper overlaid veneer for expendable pallets.

The S. S. White Dental Manufacturing Co., Industrial Div.—
Tapered elastomeric polyethylene.

MACHINERY

Acme Steel Co.—
Dual head automatic strapping machine.

Amaco, Inc.—
Arbis automatic vial and ampul silk screen painting and firing unit; Hoefliger & Karg automatic leaflet folding machine.

Amsco Packaging Machinery, Inc.—
Compact heat sealing unit with speed of 900 linear in./min.

Apex Machine Co.—
High-speed ink press for cylindrical objects; air-operated hot stamper for flat items.

Atlas Vac-Machine Corp.—
Pressure former and trimmer, operating at 10-12 cycles/min.

Barnes Drill Co.—
High-speed screw feeder (60 cartons/min.).

Biner-Ellison Machinery Co.—
Pressure filler for viscous and semiviscous products.

Bostitch—
Wide crown top and bottom stapler, air operated. *(Turn page)*

KEEP BULK MATERIALS FLOWING FREELY

SYNTRON ELECTRIC VIBRATORS

ASSURE STEADY MATERIALS FLOW FROM BINS, HOPPERS, CHUTES

Syntron builds an Electromagnetic Bin Vibrator unit to meet almost every requirement. Prevents most types of bulk materials from arching or plugging in bins, hoppers, and chutes.

The Electromagnetic drive unit produces 3600 instantly controllable vibrations per minute, providing a steady materials flow to processing equipment.

Every Syntron Electromagnetic Bin Vibrator is rugged and durable. The absence of mechanical moving parts assures long, trouble-free service with very little maintenance.

Keep bulk materials flowing efficiently and economically.

Write for a Syntron Catalog and the name of the representative nearest you.

61V1

Syntron Vibrators being used to prevent bridging of very fine chemicals in hoppers

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Other Syntron equipment of proven dependable quality

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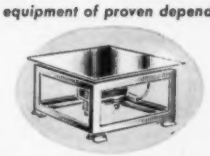

Packer & Jolters

Gravimetric Feeders

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For Dynamic Packaging,

When you come to the packaging show... at Carbide's exhibit, you'll see some of the most exciting packaging developments of the past year. Learn about their success, as product containers, and as sales stimulators... talk to plastic packaging specialists. Find out how plastics can improve your packaging...

Here are just a few of the outstanding developments in plastics packaging on display at the Union Carbide exhibit, booth #733.

Even at –20°F., containers made of this new *low-oriented* styrene have almost four times the impact resistance of conventional styrenes of their class–an important development in see-through packaging of ice cream, cottage cheese, and cole slaw.

Greater convenience and less spillage when opening are the major advantages of this new package for frozen strawberries which features a polyethylene-coated paper liner. The liquid-tight liner is heat-sealed closed on automatic machines faster than 200 per minute.

A special cap prevents curious children from opening medicine bottles. An outer cap of BAKELITE high-density polyethylene, an inner cap of BAKELITE C-11 fit together in an ingenious assembly. It must be simultaneously pressed down and turned to open, rarely accomplished by a young child.

Start Here...with PLASTICS

The heat-sealed polyethylene film package for mailing this magazine brought a saving of almost 30% under the cost of the previous package, together with enthusiastic response from subscribers and advertisers.

Newly-designed bottles for household bleaches are now blow molded of BAKELITE high density polyethylene. The benefits—light weight, freedom from breakage, economy. Another bonus is real savings in shipping costs.

Long-term packaging economy is the big reason why bakers are rapidly increasing their use of polyethylene film for the automatic overwrapping of bread. Polyethylene also provides excellent moisture retention, high clarity and sparkle, and its soft texture gives that "feel of freshness."

Ideas like these complement Union Carbide's wide range of plastic materials—the largest variety of plastics available for packaging. Backed by continuing resin and packaging research, materials are engineered for specific uses. For information about them, write Dept. IC-101D Union Carbide Plastics Company, Division of Union Carbide Corporation, 270 Park Avenue, New York 17, N. Y. *In Canada*, Union Carbide Canada Limited, Toronto 12.

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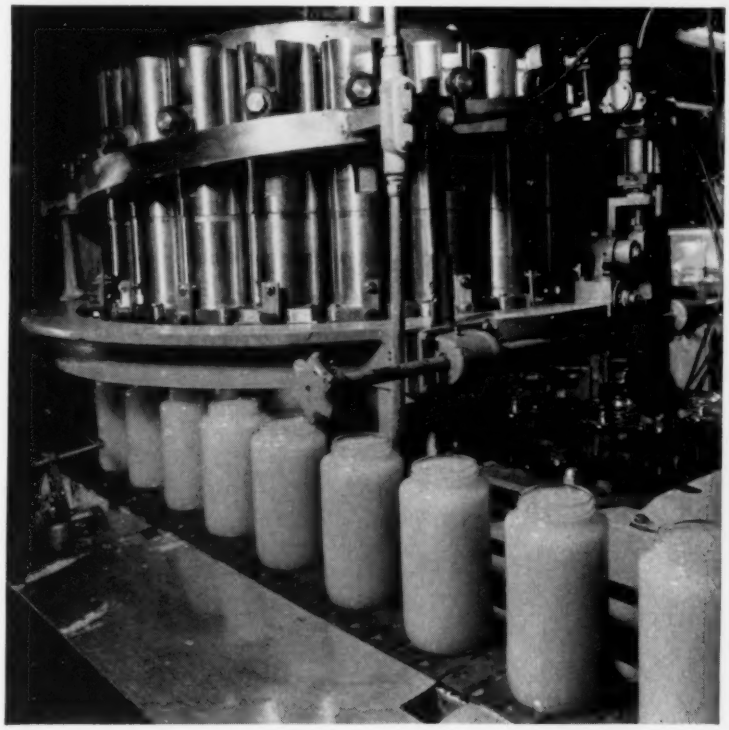

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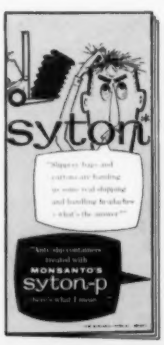

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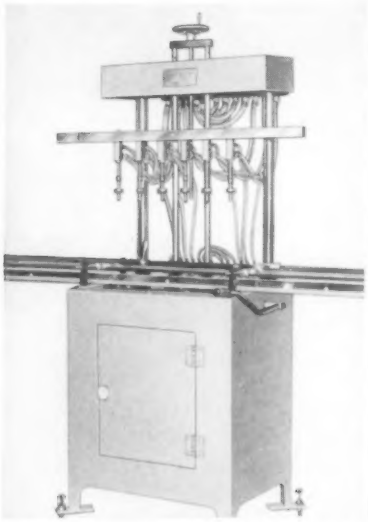

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Straight line, automatic or semi-automatic

Liquid control tank or manifold

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Air-powered staple nailer, handling 2-in. 16-gauge staples.

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Automatic pouch maker for pillow and four-seal type packages (with speeds to 150/min.); high-speed (to 300/min.) checkweigher; shrink wrapping machine (speed to 60/min.).

Globe Industries, Inc.—
High-speed heat sealing conveyor.

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Air-operated side and rear end case coder; automatic consecutive numbering machine; high-speed variable-word box end printer.

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Semiautomatic and fully automatic capping heads; case forming for dairy containers.

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Mercury Heat Sealing Equipment Co.—
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Automatic molding equipment for expandable polystyrene.

Minnesota Mining and Manufacturing Co.—
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Automatic label imprinter and applicator.

New Jersey Machine Corp.—
Fully automatic (speed to 120/min.) round-bottle labeler; semiautomatic thermoplastic label applying machine with mechanical roll-label feed and copy printing station.

Ortman-McCain Co.—
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High-speed five-way classifier with speed to 250/min. *(Turn page)*

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Tape guarantees customer satisfaction. Tape also builds greater respect for your product.

Product manufacturers who seal their shipping containers with glue or staples overlook resulting customer dissatisfaction in the struggle to get their purchase out of the case. This customer inconvenience can cause:

- Product damage
- Ripped clothes
- Cut hands
- Broken fingernails
- A torn box, spoiled for re-use

This often causes serious customer aggravation, or even a suit for damages.

The practical and economical way to avoid all these difficulties and gain a more dust proof and pilfer proof seal, is to seal with the new "Peelable" or "Strippable" Tapes and have visibly extended, convenient lift tabs at both ends (Pat.Pend.). These Lift tabs are accomplished by a special knife blade exclusive with General Tape Sealers.

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SAVINGS AND ADVANTAGES

1. Doubles production per man hour. Cuts labor costs in half.
2. Accurate tape lengths and large 24" diameter rolls lower your costs.
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ALSO . . . The Finest fully automatic machines for box making and box sealing.

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Packaging Industries, Ltd., Inc.—
New type of blister sealing.

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Counting and imprinting machine.

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Vacuum forming machine; trimming machine for blisters and skin packed products.

Pneuma-Flo Systems Inc.—
Circulating, agitating pumps for inks and adhesives; infra-red dryers and air drying units.

Popper & Sons, Inc.—
Two-piece capsule filler and color banding machine.

The Robins Engineering Co., Inc.—
Aerosol packaging equipment; coffee cream packaging machine using laminated foil blister packaging.

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High-speed packaging for ALL with low-cost Kliklok

One of the St. Regis ways to Systematic Packaging—Look at all the things that now can be packaged—more profitably—with a compact Kliklok system from St. Regis®. You'll pack faster, more economically with the automatic operation of Kliklok machinery plus glueless, space-saving cartons. Printed box or plain, your package is firmly locked to assure rigid product protection, fewer "cripples."

The Folding Carton Division offers Kliklok machines in various models to suit individual product and production needs. Guaranteed for dependability, a Kliklok system also can be adapted to different sized cartons in as little as five minutes . . . adapted to pace your line at the tempo you want. It's your all-around cost-cutter!

Kliklok is only one of the complete, modern packaging systems from the St. Regis Folding Carton Division. Systems designed to produce better packages at lower cost. Drop a line to the plant below nearest you. Specify what you make, and we'll send details on the best St. Regis way to improve your packaging *systematically*.

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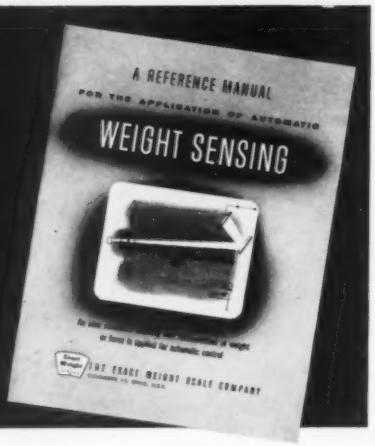

It shows you how measurement of weight or force is applied for AUTOMATIC CONTROL

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and automatic equipment to apply it.

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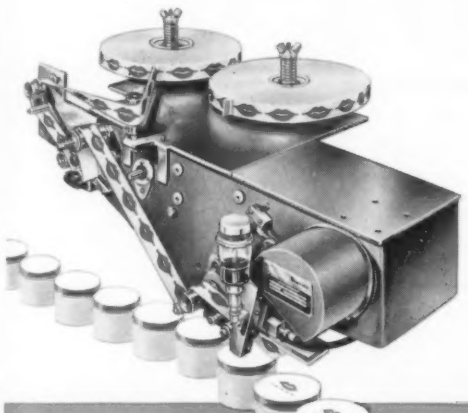
The S-603 Pad Applicator is just one of the more than 100 manual, semi-automatic, or fully automatic dispensers and applicators available from 3M.



"SCOTCH" BRAND pressure-sensitive tapes take on a new perspective when you think of mating them with equipment such as the "SCOTCH" BRAND S-603 Pad Applicator. In a single "kiss," at one-fifth of a second, the S-603 indexes, registers and attaches printed tape labels, instruction tabs, price spots; seals openings; color codes. It does all this, and more, while keeping pace with production line output of up to 300 units per minute. For more information, contact your 3M Representative, nearest "SCOTCH" BRAND Tape Distributor, or write: 3M Co., 900 Bush Ave., St. Paul 6, Minn. Dept. IBH-41.

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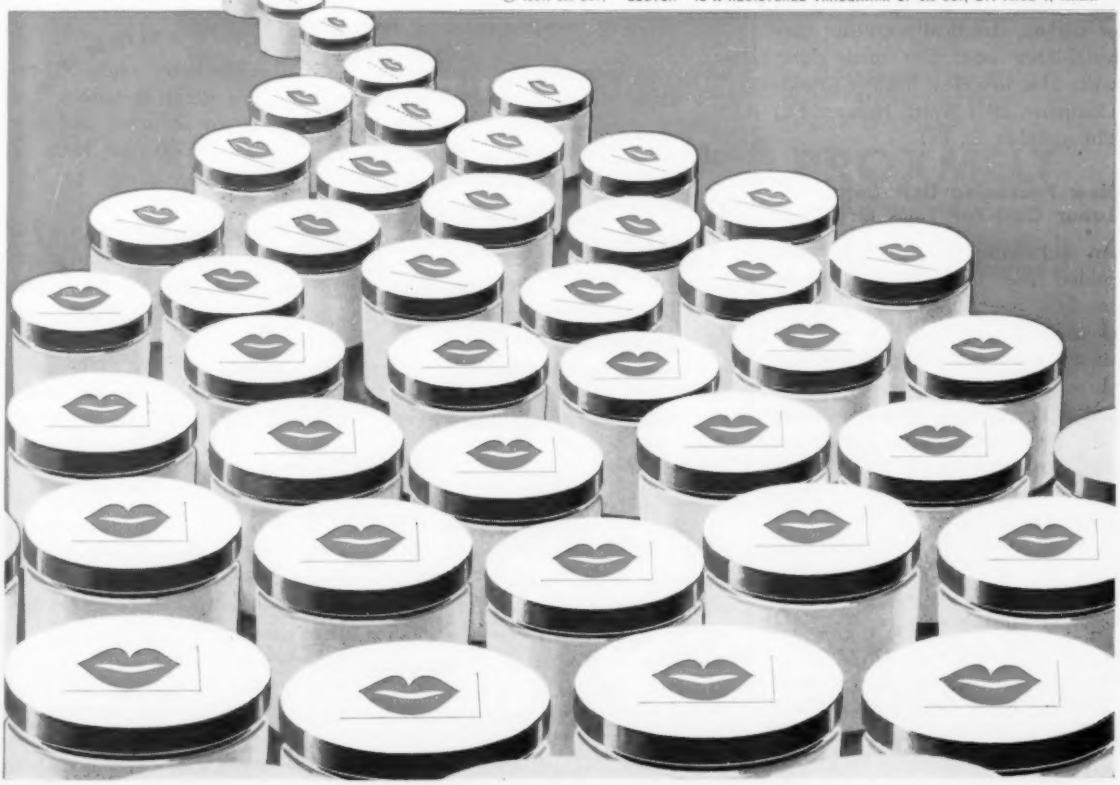

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Poly-Pack of Heavy Grease Saves Oil Co. $37,000 Yr.

A new compact packaging machine is now forming, filling and sealing 1 lb. packs of viscous grease in polyethylene automatically. Producing 20 bags/minute, this Mercury Verti-Pak is expected to revolutionize not only the packaging, but also the application of the grease. Entire package is deposited in transmission or gear train, eliminating messy handling and metering. For more information, write Mercury Heat Sealing Equipment Company, 2601 N. Howard St., Philadelphia 33, Pa.

Over 40 Pouches a Minute with 2-Side Registration

New packaging machine combines high-speed operation with dependable weight and registration control. Packaging dry gravy mix, this product-oriented unit uses a Mateer auger filler, and synchronized registration controls for accurate alignment front-to-back. Priced under $10,000, it eliminates the need for pre-made bags for separate fillers or sealers, drastically cutting material-labor cost. For more data, write Mercury Heat Sealing Equip. Company, 2601 North Howard St., Philadelphia 33, Pa.

New Packaging Unit Cuts Labor Cost for Tube Mfg.

An automatic device that feeds folded inner tubes to a packaging machine now eliminates one complete hand operation. When placed on a conveyor, the folded tubes go directly into the bag making mechanism without further handling. The unit then delivers a complete flexible package automatically. Savings over other methods using pre-made bags are even greater. For more information, write to Mercury Heat Sealing Equipment Company, 2601 North Howard St., Philadelphia 33, Pa.

Engineers from Mercury Heat Sealing Equip. Co. at AMA Show in Chicago. Will answer questions in Booth 213 about specific packaging problems.

Skilled young "hot rodders" make good line mechanics, set-up men

Taking the perfectionist type of bright young hot-rod car enthusiast and transferring his talent, interest and drive to a high-speed packaging line can pay dividends

Even while walking to an athletic stadium, George G. Flood, director of manufacturing, Grove Laboratories Incorporated, St. Louis, was turning over in his mind the question of how to find set-up men, machinery adjusters and packaging line mechanics. But this night a flash of inspiration hit him as he watched a "hot rodder" working over his car. It was a beautifully machined job, and this led Mr. Flood to engage the boy in conversation about his interest and ability in mechanical work.

After inviting the boy to visit the plant to explore the possibility of fitting him into mechanical work there, Mr. Flood realized that here was an untapped source of future set-up men and mechanics—as he describes it, "a farm system already available."

The real hot rodders, the natural mechanics, are usually members of recognized, nationally associated automotive clubs. These groups have different names, but there are many of them, and they all strive for high standards of performance, according to Mr. Flood.

"Basically these boys have a fine mechanical background," he pointed out. "They have some knowledge of electrical systems, vacuum systems, and power systems. They are trained, and they all follow definite principles which make them ideally suited to be set-up men," he explained.

Strives For Perfection

"First of all, any real hot rod man keeps his equipment in spotless condition. He is primarily interested in performance. He is continuously striving for perfection or achievement in the particular vehicle he is working on. He is rigidly trained in safety. His machine has safety equipment which becomes particularly important in

races or shows," Mr. Flood narrated.

"He is a natural for new ideas," he continued. "Visit a rally or autorama that these boys conduct and see some of their futuramic cars. You will readily agree they have fertile minds. All these points are ideally suited to make them good set-up men," he said.

Tap His Interest, Skill

This means, according to Mr. Flood, that the same pride a boy of this type takes in his hot rod equipment can be transferred to automatic high-speed production and packaging equipment. He explained that improving production standards can bring one of these young men the same self-satisfaction that he gets from improving the performance of his own car.

Mr. Flood pointed out that frequently these hot rodders spend much of their time and all of their money on improving their cars. But one by one they marry and acquire families; this means they have neither the time nor the money to pursue their hobby. "Why not tap their ability, sustain their enthusiasm and transfer their interest from automobiles to packaging line machinery," Mr. Flood asks.

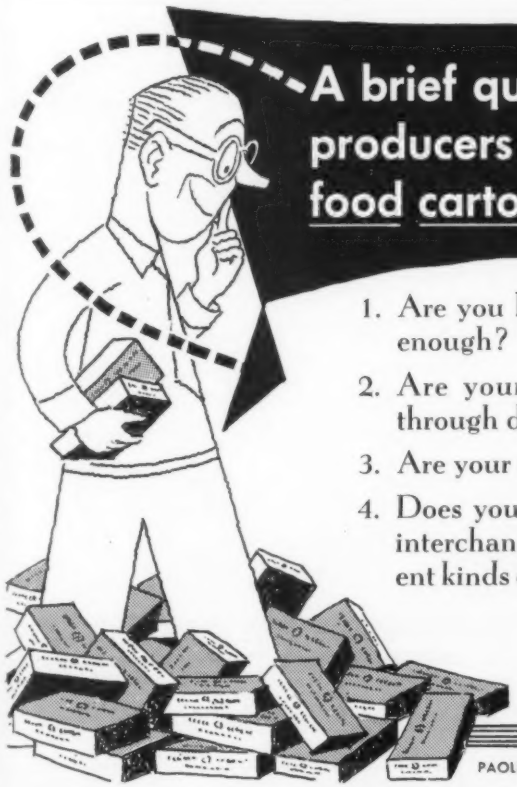
He emphasizes that in speaking of hot rodders, he is not referring to "the fresh kid with the 10-year-old car and the 10-month-old haircut." He adds further: "You won't find them on police blotters because the real hot rodders do not get in trouble. The rules and by-laws of their clubs are in many instances tougher than most company procedures and requirements," he noted, suggesting that they have the responsibility to handle high-speed machinery.

Some In Clubs, Some Alone

"But not all of these potential set-up men are organized in clubs," Mr. Flood observed, noting that in almost every community there are converted garages, loft-type operations or other places where these boys carry on their activities. He added that they are easy to spot by the way they do their work, explaining: "They always use the right wrenches, and they never burr nuts by using a pliers instead of a particular wrench."

Mr. Flood's experience with set-up men obtained through these channels has been good. Normal practice is to bring them into the company when they are 18 or 19 years old, then give them the opportunity to progress from one job category to another. He cited one instance of a boy becoming an inspector because of showing real ability to read prints. Others have moved to packaging line set-up work.

"All this is a two-way street," Mr. Flood concluded. "Besides tapping a useful source of manpower, there is also the satisfaction that you get from doing something worthwhile for a boy by giving him a chance to put his real talents to work." *(End)*



A brief quiz for producers of frozen food cartons

1. Are you heat sealing fast enough?
2. Are your seals holding through distribution?
3. Are your costs low?
4. Does your adhesive work interchangeably on different kinds of *coated* board?

If you cannot answer "yes" to *all* these questions, you should investigate...

PROXMELT®

Hot Melt Adhesive

This pioneer of hot melts is "standard" for heat sealing at high speeds of both "manufacturers" seams and flap closure of varnished, waxed, foil mounted or poly coated board for frozen food cartons. Flaps hold through shipping and storage down to minus 20°F. Proxmelts are made of approved and recognized ingredients, affirmed for food packaging, and are available for all important types of packaging machines.

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Pyroxylin PRODUCTS, INC.

Anna May Schenck joins Package Engineering as associate editor

Anna May Schenck is now an associate editor of PACKAGE ENGINEERING. Her headquarters are in the magazine's Chicago offices at 185 North Wabash Ave.

Prior to joining PACKAGE ENGINEERING, Mrs. Schenck was chief, technical publications services, metal division R. & D., Continental Can Company, Inc., Chicago.

Before joining that company more than seven years ago, she was science editor of American People's Encyclopedia, and prior to that, assistant to executive vice president, Encyclopaedia Britannica Films. Mrs. Schenck has also been a production planning engineer of Food Machinery and Chemical Corporation, and during World War II, was assistant to the head of the spare parts department, Wright Aeronautical Corporation.

She is a graduate of Florida Southern College with a B.S. degree in science and an A.B. degree in English—magna cum laude. She received the English medal as the outstanding student during the year of her graduation. Subsequently, she has had graduate work at Northwestern and De Paul Universities.

Mrs. Schenck is a charter member of Society of Technical Writers and Publishers; professional member, American Association for Advancement of Science; Institute of Food Technologists; Technical Association of the Pulp and Paper Industry; Special Libraries Association, and Illinois Libraries Association.

She has been active in IFT committee work, both locally and nationally. She has been the author of numerous journal articles, research bulletins, and other publications while with Continental Can. She authored more than 100 entries in the fields of science, engineering, and medicine for American People's Encyclopedia. *(End)*

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PEANUT BUTTER?
colton-hope fillers and accessories give you special high-speed machines at the price of standards.
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Many astute users of adhesives have cracked out of a cost-price-profit squeeze . . . with the help of FINDLEY adhesives.
Findley has been helping cost-conscious packagers and paper-converters hatch profits for many a year. Could help you, too.
Tell them your problem. They'll send samples.
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Who developed

a cellophane with greater transparency than any other?

a cellophane that heat-seals at lower temperatures than any other?

a cellophane that cuts meat wrapping costs up to 10%?

a cellophane that keeps potato chips and other high oil-content foods saleable 50% longer?

a cellophane that withstands sub-zero temperatures for months without shattering?

a cellophane that is completely impervious to grease?

a cellophane that gives tough, tight wraps for the largest, boniest cuts of meat?

a cellophane that keeps cupcakes, pound cakes and jelly rolls fresh 12 days instead of 7?

a cellophane that stays clear and sparkling under constant refrigeration?

a cellophane that assures maximum resistance to cockling?

a cellophane that combines greater economy, stability and durability than any other?

Olin did.

Strong claims? Of course, but each is backed by exhaustive laboratory tests or actual customer reports.

And we're working constantly to develop other new cellophanes to give your product maximum protection and sales appeal.

If you have a cellophane packaging problem, see your Olin representative or converter. We probably have just the cellophane to meet your specific needs. If not, chances are, we're already working on it.

PACKAGING DIVISION Olin

FILM OPERATIONS, 460 PARK AVE., NEW YORK, N.Y.

ANNOUNCEMENTS OF MACHINERY AND PRODUCTS

1. Before each announcement headline is a code number. As you select items on which you want more information, *note* this number.
2. Now *circle* the corresponding numbers on the postcard inside the back cover.
3. Next, *fill* in your name and address.
4. Then, *mail* the card— we pay the postage. For your convenience, we have also included addresses of suppliers so that you may write directly for more information.

1—Shrink-Cover Package

A new bakery package utilizes the application of hot air to lock on a transparent shrink

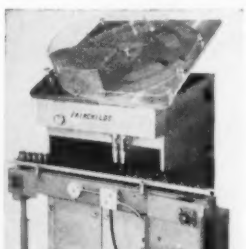
cover to an aluminum pan. The entire operation is automatic except for placement of a piece of the film over the pan by an operator. The process consists of placing a piece of Cryovac L-Film (a shrinkable polyethylene) loosely over the filled pan, and shrinking that film by means of hot air in two shrink tunnels so that the film loops over the lip of an aluminum pan to form a tight covering. Other features the manufacturer points out are that the package can be frozen, the lid is reusable, labor required for overwrapping is eliminated, and 40 per cent less film is used because just the top of the pan is covered. The sealing machine, called SCM-IV, will handle all kinds of baked foods and a variety of shapes and sizes of aluminum pans. For more information write: The Cryovac Div., W. R. Grace & Co., Dept. PE, 62 Whittemore Ave., Cambridge 40, Mass., or *circle number on card.*

2—Tetrahedron Container

A new form, a tetrahedron-shaped flexible package called Ultra-Pak, has been added to the product and packaging service line of Bemis, including the machine which forms, fills, and seals it in a continuous operation. The tetrahedron package is formed by four triangular faces joining to form a pyramid-like shape. Container sizes range from ⅛ oz. to 1 qt. The Ultra-Pak machine is capable of intermittent product filling, making possible the packaging of powders, liquids, and semiliquids, instead of liquids alone, the maker claims. Another advantage the announcement points out is that the machine has a capacity of 140 to 250 packets/min. and it will handle most any roll form of heat-sealing material. For more information write: Bemis Bro. Bag Co., Dept. PE, 408 Pine St., St. Louis 2, Mo., or *circle number on card.*

3—Vibration Filler

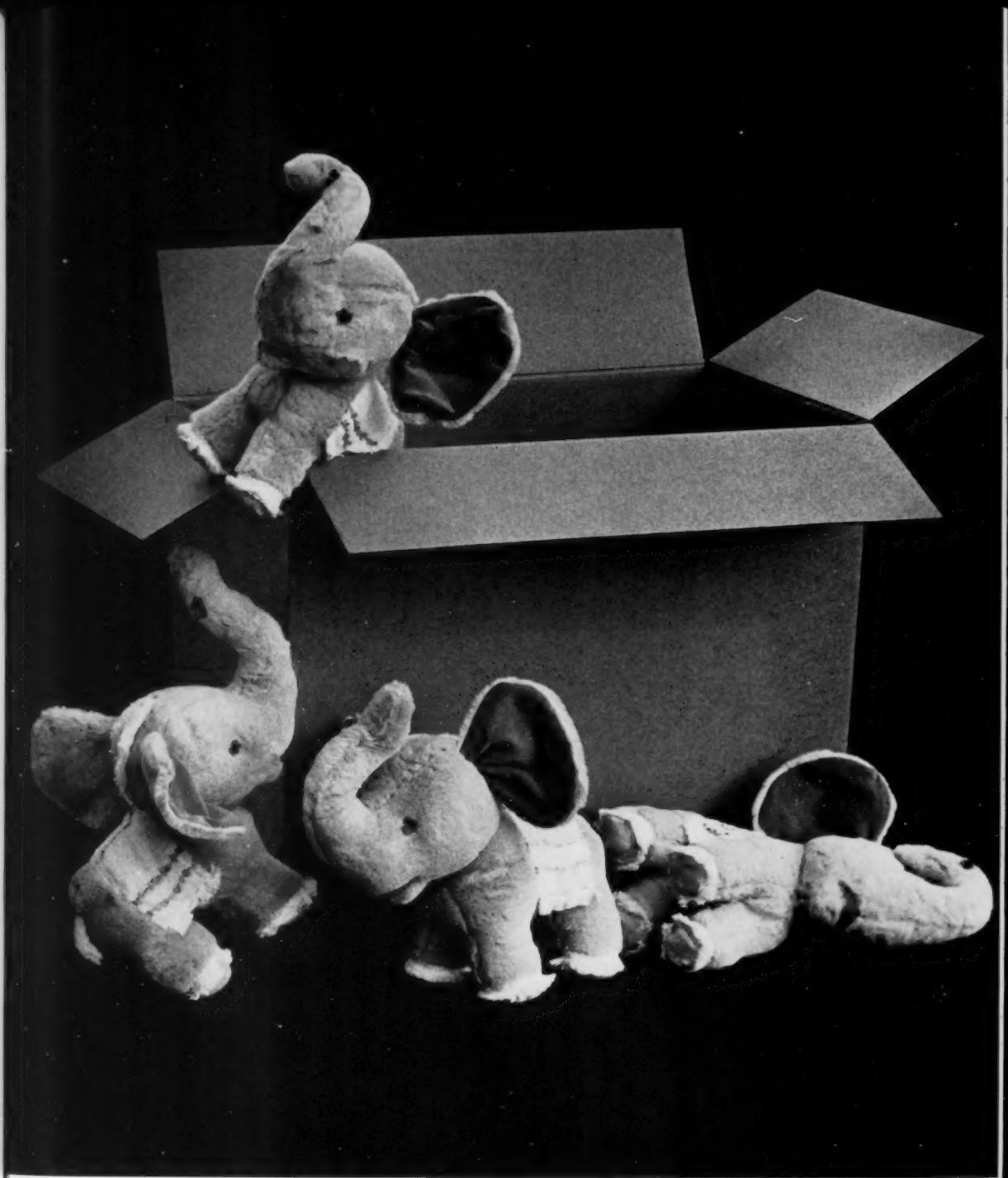
Recently introduced was the Model No. 33-A automatic electric packer. The unit is adapta-



ble to almost any small, uniform object such as tablets, capsules, candies, hardware items, and the like. The machine, which fills by count, incorporates two independently controlled vibrators, an adjustable pitch table top, variable-speed drive, and adjustable guide rails, filling spouts, and bottle stops to handle containers ranging from small vials to full quarts. Bottle stops are by means of solenoids, are spring loaded, and positive. A minimum production rate of 40 containers/min. (100-count aspirin size) is claimed by the manufacturer. For more information write: Fairchild's, Inc., Dept. PE, 4864 Eagle Rock Blvd., Los Angeles 41, Calif., or *circle number on card.*

4—Gummed Tape Adhesive

A new adhesive, Renacel-100, has been developed for the Blue Ribbon brand of gummed tape. The new adhesive is said by the maker to exceed accepted speed and tack strength standards for gummed sealing tapes. The tape is recommended for large-volume operations where speed and complete closure of container seams are essential. Features claimed by the maker for the tape are that it will not become stiff or lose tack strength in cold weather, the formula extends tape life since aging increases bonding strength of adhesive, and it is odorless. Tapes are available in a range of colors, sizes, basis weights, and can be printed with one to four colors. For more information write: Hudson Pulp & Pa-



STRONG ENOUGH TO HOLD A HERD OF MILD ELEPHANTS

Toy elephants, to be sure. But Hoerner corrugated specialists have solved many weighty packaging problems. They have packaged juke boxes, motors, appliances, boats, playground equipment, and many other heavy items that need strong packages.

Packaging a wild elephant wouldn't even faze them.

HOERNER BOXES, INC.

CORRUGATED PACKAGING SPECIALISTS FOR MID-AMERICA

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For more information circle No. 291 on Reader Service Card

BLISTER PACKAGING FACTS!

X Sealing through the blister (figure 1) boils out the plasticizer making blister flange weak, thinner, distorted and brittle. Wide flange is required because seal must be kept away from blister, or heat will cause deformed blister. Only narrow portion of flange can be sealed, producing unsightly seal which reduces package effectiveness.

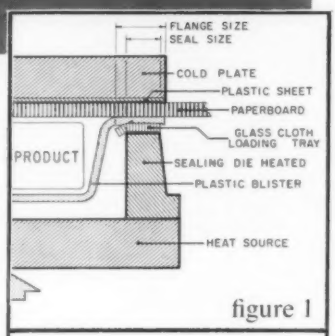


figure 1

√ Tronomatic BlisTpak seals through the package card (figure 2)...permits use of narrow flange and sealing close to product *without* blister distortion. Flange thickness is pressed firmly into the paperboard fibers for flush flange surface. Material waste is reduced, package is strong, warp-free and attractive.

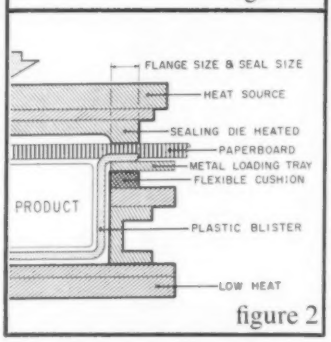
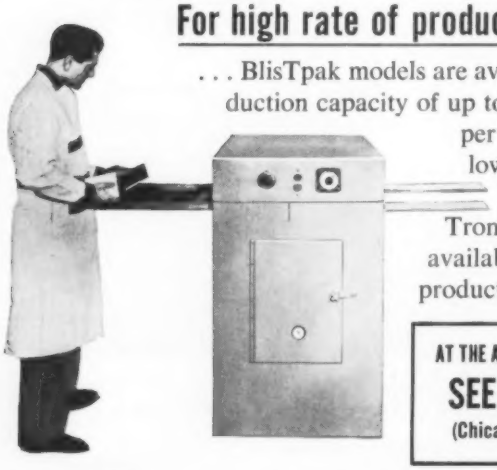


figure 2

For high rate of production

. . . BlisTpak models are available with a production capacity of up to 80,000 packages per 8-hour day at the lowest labor cost per package. Other Tronomatic sealers are available to meet specific production requirements.



AT THE A. M. A. PACKAGING SHOW
SEE BOOTH 203
(Chicago, Ill. April 10-13)

Write, Wire or Phone for Complete Information
TRONOMATIC MACHINE MANUFACTURING CORP.
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Manufacturers of plastic forming, molding, fabricating, sealing and cutting equipment

per Corp., Dept. PE, 477 Madison Ave., New York 22, N.Y., or *circle number on card.*

5—Extendible Conveyor

Just out are LePall extendible conveyors which permit a user to incorporate adjustable sections

into its conveyor line to fit particular needs and eliminate custom-made conveyors. Designed to standardize packaging conveyor equipment for automated lines, the extendible conveyor permits quick and easy addition in length or height when changes are necessary, the maker claims. Extendible sections in 5-, 6-, and 8-ft. lengths are available from stock; each with full 2-ft. adjustment. Standard conveyor sections come in 5-, 6-, 10-, and 12-ft. lengths with a nylon chain or optional stainless steel chain. The maker states that interchangeability of the motors in the drive end (¼, ½, and ¾ h.p.) allows for increase or reduction in capacity. Height of the conveyors is adjustable from 32 to 42 in., and the four standard widths are 3¼, 4½, 6, and 7½ in. Optional equipment includes 90° transfer discs of stainless steel, side guides (both fixed and adjustable), variable-speed drives, and an adjustable take-up end. For more information write: LePall Co., Dept. PE, 234 Main St., Cary, Ill., or *circle number on card.*

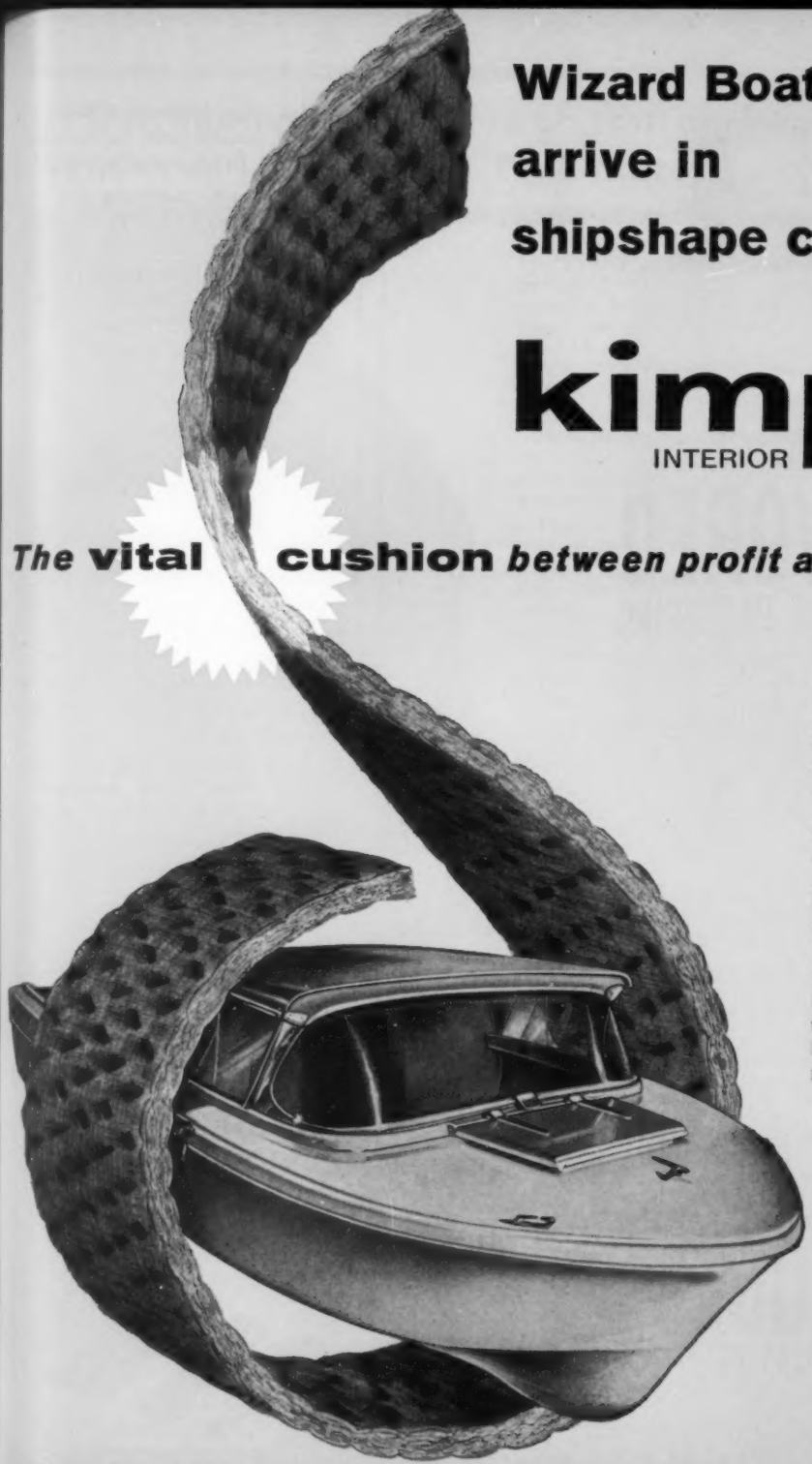
6—Steel Nesting Pails

A new 5-gal., tapered nesting pail is being produced. According to the maker, these leakproof steel pails occupy one-third the amount of space required for straight-sided pails during shipping and storage. Gauges available are 24, 26, and 28. A built-in depressed panel

Wizard Boats arrive in shipshape condition

kimpak®
INTERIOR PACKAGING

The* vital cushion *between profit and loss!



Wizard Boats are seaworthy—built to withstand foul weather and rough seas. But it's the buffeting of overland trips—from factory to dealer—that calls for the protection of KIMPAK interior packaging.

KIMPAK protects highly polished surfaces—hulls and decks—from scratches, nicks and dents. Soaks up shocks that cause breakage. And KIMPAK is clean, light, supple—easy to work with!

What can we protect for you?

KIMPAK is stocked for immediate delivery throughout the United States and Canada by leading coarse paper merchants and packaging supply firms.

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PRODUCTS

FREE! trial supply of KIMPAK

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Our product is_____
Please send us a FREE trial supply of KIMPAK for test shipment.

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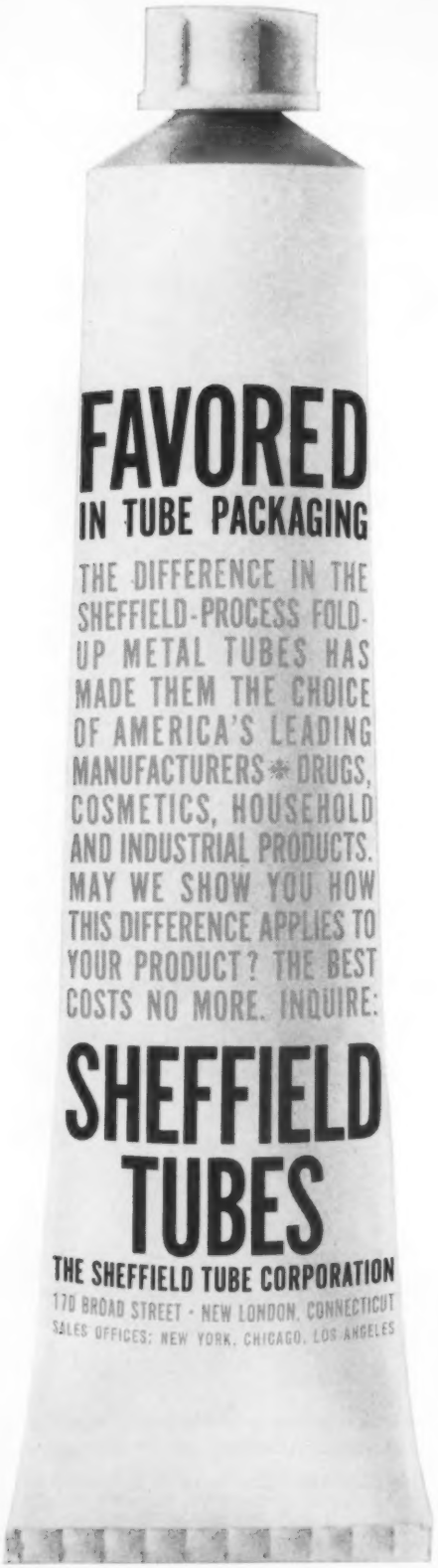
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THE DIFFERENCE IN THE SHEFFIELD-PROCESS FOLD-UP METAL TUBES HAS MADE THEM THE CHOICE OF AMERICA'S LEADING MANUFACTURERS * DRUGS, COSMETICS, HOUSEHOLD AND INDUSTRIAL PRODUCTS. MAY WE SHOW YOU HOW THIS DIFFERENCE APPLIES TO YOUR PRODUCT? THE BEST COSTS NO MORE. INQUIRE:
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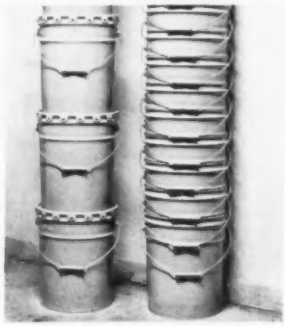
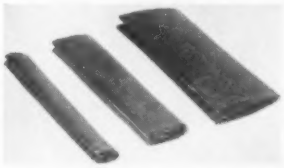
on the cover increases stability of filled, stacked pails, the maker states. A 16-lug cover or ring-



seal cover is used (same diameter as on standard straight-sided pails) and the same closing tool can be used. Side seams are electrically welded for strength, the maker states. Another feature the announcement points out is that the pails have a second bead below the pail ear which permits stacking without having them stick together, since the point of contact is at the second bead and not in the taper. This bead furnishes a dust-proof feature by overlapping the opening and keeping the pail interiors clean while nested. The second bead also protects the top curl of the nested pails. For more information write: Bennett Industries, Inc., Dept. PE, 115 Washington St., Peotone, Ill., or *circle number on card.*

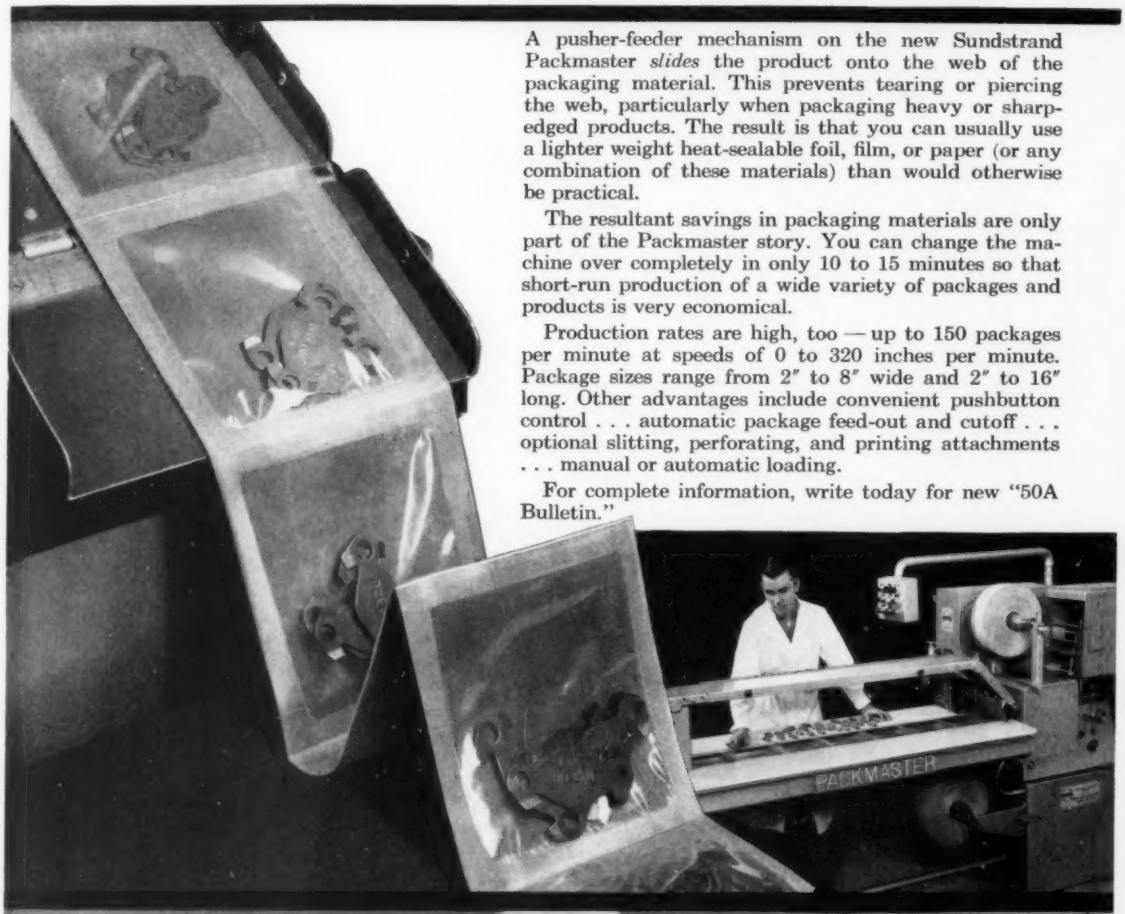
7—Protects Edges

A new ½-in. size of Edg-Pak has been added to this company's line of cushioning and edge pro-



tection products. Formerly available in 2-in. and 1¼-in. sizes only, the new ½-in. size fills a need for protection of narrow edges or flanges of metal stampings, wire strapping, turned-up lips, or extrusions. Available in

Get lighter weight, lower cost packages — from a Sundstrand Model 50A Packmaster with pusher feeder



A pusher-feeder mechanism on the new Sundstrand Packmaster *slides* the product onto the web of the packaging material. This prevents tearing or piercing the web, particularly when packaging heavy or sharp-edged products. The result is that you can usually use a lighter weight heat-sealable foil, film, or paper (or any combination of these materials) than would otherwise be practical.

The resultant savings in packaging materials are only part of the Packmaster story. You can change the machine over completely in only 10 to 15 minutes so that short-run production of a wide variety of packages and products is very economical.

Production rates are high, too — up to 150 packages per minute at speeds of 0 to 320 inches per minute. Package sizes range from 2″ to 8″ wide and 2″ to 16″ long. Other advantages include convenient pushbutton control . . . automatic package feed-out and cutoff . . . optional slitting, perforating, and printing attachments . . . manual or automatic loading.

For complete information, write today for new "50A Bulletin."

SUNDSTRAND

SUNDSTRAND PACKMASTER Product of

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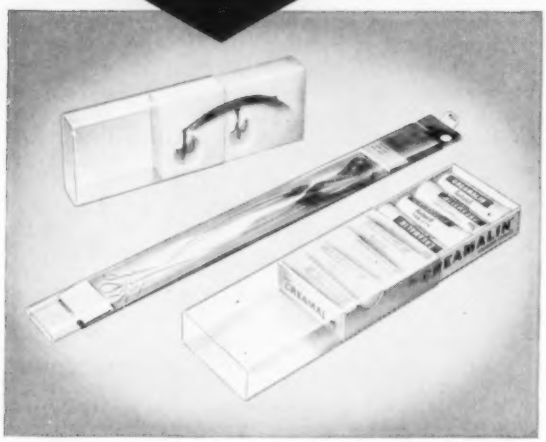
The World's Largest Producers of
STOCK plastic
VIALS and
JARS . . .



plastic SLEEVES and SCABBARDS

Clear "slide-on" rectangular sleeves and scabbards for use with folding boxes, set-up boxes, die-cut cards, and polystyrene foam platforms. Give better product visibility and greater protection. Many sizes available from stock dies. Clearsite sleeves and scabbards can be purchased in any length and with a maximum perimeter of 10 inches. Special shaped extruded sleeves—triangular, tunnel-shaped, etc.—are also available.

These designed-to-sell Sleeves and Scabbards are just one of thousands of Clearsite stock packaging items designed to sell *your* product and cut *your* packaging costs.

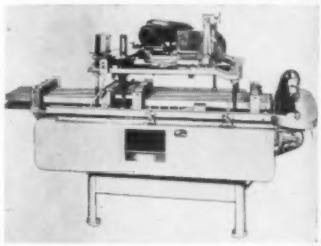
We will be happy to send free samples.
Address Dept. E

CELLUPLASTICS, INC.
A Subsidiary of Brockway Glass Co., Inc.
24 Commerce Street, Newark 2, N. J.

cushioned X-Crepe paper, neutral X-Crepe, and polyethylene-coated papers, it can be furnished in cut lengths or in rolls. The gripping action of product is provided by 24-gauge, spring steel MB grade oil-tempered wire, cushioned by the various papers available. For more information write: Flex-O-Lators, Inc., Edg-Pak Div., Dept. PE, Carthage, Mo., or *circle number on card.*

8—Six-Cylinder Filler

Recently introduced was a six-cylinder, automatic straightline filler model specifically designed



for liquid and semiliquid products in 1½-oz. flat oval bottles. The maker claims the machine eliminates problems created by the fine fill requirements and unusual shape of such containers. Employing a variable-speed drive and adjustable fill attachment, the filler moves six rows of containers along a solid stainless steel bar indexing slide table which features a double-lift station for purging and filling. For more information write: Elgin Mfg. Co., Dept. PE, 200 Brook St., Elgin 1, Ill., or *circle number on card.*

9—Laminated Foil Can

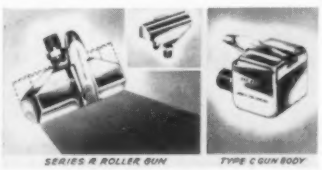
The development of a new spiral-wound, aluminum foil can for use in the frozen food industry and others has been announced. It is being produced by R. C. Can Co. and a major feature is that in the 6-oz. frozen orange juice container, an initial savings of about 20 per cent can be effected over the conventional tin plated steel can and about 14 per cent over

an aluminum can with tin plate ends, the developers claim. The foil can consists of an inner liner

of laminated aluminum foil, a body wall of fibreboard, and an outer layer of laminated aluminum foil which doubles as the label. All components of the can are spiral-wound into a tube from which the cans are cut. The inner laminated foil liner is constructed with a specially designed folded lap seam and the liner is coated. Other product applications include oil and grease, emulsion paints and coatings, nuts, popcorn, and coffee. For more information write: Anaconda Aluminum Co., Dept. PE, 1430 S. 13th St., Louisville 1, Ky., or *circle number on card.*

10—Glue Guns

A new line of self-contained, machine-mount FF glue guns, for high-speed coating of flat



surface areas, has been reported. Available in roller widths from ¼ to 6 in., the units measure 2 in. from front to back, and according to the maker, will lay an accurate ribbon or multiple bead pattern of adhesive at any sealing speed. These compact FF guns (Series R) incorporate a ball-spring plunger valve control which can be actuated by a solenoid valve, electric eye arrangement, or other mechanical means. Other additions to the Fox line include a selection of gun bodies (Type C) which

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The World's Largest Producers of
STOCK plastic
VIALS and
JARS . . .

plastic OIL
DISPENSING tubes

Handy plastic dispensers for grease and oil. Units are all plastic and available in ½", ⅜", ¼" and 1" diameters. Body of tube is extruded so any length can be obtained. Customer has choice of a flat molded bottom or heat sealed bottom. Tubes can be filled and sealed automatically by Celluplastics. Special carding and display packaging also available. Entire dispensing unit can be multicolor printed.

These designed-to-sell Oil Dispensing Tubes are just one of thousands of Clearsite stock packaging items designed to sell *your* product and cut *your* packaging costs.

We will be happy to send free samples.
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SPEEDS UP PRODUCTION

• Cartons or cases of bottles, jars, or cans dumped on table are instantly unscrambled and regimented into a single file to keep a continuous flow of units on your production line. Reduces labor costs... minimizes breakage... saves floor space... and meets all sanitary specifications as operator does not handle mouths of units.

ARE YOU CHANGING TO GLASS?

Send for Bulletin ST-1 and learn why there are twice as many ISLAND Styl-O-Matic Unscramblers in use than all other makes combined, and how they are used to unscramble practically every type of container imaginable.

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Please send full details on the Styl-O-Matic Unscrambling Tables as described in Bulletin ST-1

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Serving Industry 20th Year

feature an internal valve action identical to that employed in the Series R guns. Type C bodies measure 1½x1½x1½ in. and can be fitted with FF gun tips to perform a variety of operations such as roller, groove, and angle gluing. For more information write: John P. Fox Co., Inc., Dept. PE, 1107 S. Mountain, Monrovia, Calif., or *circle number on card.*

11—Hydraulic Cutter

A new hydraulic press, known as the Trim-O-Matic, cuts out multiple parts in one complete,

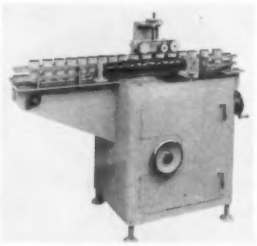
automatic operation. It will also trim skin-packaged items, cutting away the excess material. Platen area is 18x18 in. Cutting cycle is preset according to the thickness of the material being trimmed or cut. Two start buttons, one on each side, require the use of both hands—a safety feature of the machine to protect the operator. Casters permit mobility. The machine measures 45x27½x43 in. and weight is 1200 lb. The ram force is 16 tons. For more information write: Product Packaging Engineering, Dept. PE, 5713 Joanne Pl., Culver City, Calif., or *circle number on card.*

12—Heat-Seal Coating

Announced is a new heat-sealable coating for cellulose acetate film. This coating, marketed as 2P-240C heat seal adhesive, is suggested for laminating acetate film to paper for such applications as skin or blister packaging. The adhesive may be applied by a roll coater or rotogravure, is non-blocking, and heat sealable over a wide range of temperatures, the maker claims. The maker also asserts that pre-coating cellulose acetate film with the heat seal adhesive for blister packaging results in savings and improved efficiency as compared to coating the board stock on a sheet coater. For more information write: International Coatings Co., Dept. PE, 1441 W. El Segundo Blvd., Compton, Calif., or *circle number on card.*

13—Coder-Dater

A new coder-dater has been developed to provide for product control and identification of



plant, shift, batch, age, and other such information. The high-speed automatic machine handles metal, glass, or plastic containers with flat or concave bottoms. The printing wheel is removable for changing of type and is designed so that when replaced it will automatically index with the container conveyor. Vinyl or rubber type is available, all inking rolls are removable for cleaning, and the inking rolls are adjustable to meter the desired amount of ink. A Porelon inking roller may be used in place of ink well where applicable. Another feature pointed out is that the machine is supplied with a handwheel to operate the machine independent of the drive. Speeds up to 600 containers/min. are possible, depending on the size of the container. The code dater will handle containers measuring 1½ to 3½ in. in diameter and heights from 3 to 9 in. For more in-

GAYLORD researches out the failures

You can't afford to experiment: the wrong kind of shipping container can cost you hours, customers and dollars.

So Gaylord packaging research engineers experiment for you with the complete box, liners, adhesives, interior design—the works. Every Gaylord container that you get is *proven*.

Does your product need a better container? Call your nearby Gaylord Man. Let him and Gaylord Research go to work for you now.

CROWN ZELLERBACH CORPORATION
GAYLORD CONTAINER DIVISION

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PLANTS COAST TO COAST

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Reduce your multiple carton addressing and marking costs with "TOUCH STENCILING!"

Using a Weber Handprinter and Stencil, one man addresses 45 to 60 cartons a minute with "just a touch." He does the work of five or six people using other methods. After the shipment is addressed the inexpensive stencil is discarded —there's nothing to save or file.

If your office is currently typing labels, your plant cutting stencilboards or using rubber stamps, you can cut most of your marking costs in half with a modern touch stencil system. Perhaps, you'll want to prepare the stencil in the office as a by-product of the order-invoice. That's the Tab-on system. You may prefer to type a continuous-form stencil (the Continumatic) from tabulating cards. Or, you may want to have your company logo die-cut in the stencil for direct-to-carton addressing.

In any event, there's a Weber stencil and handprinter to fit every marking job, wherever it may be—plant, office, production, receiving, etc.

For full information on low cost addressing and other multiple marking operations requiring from five to a thousand impressions, send for your copy of the 16 page booklet "7 SYSTEMS TO STREAMLINE SHIPMENT ADDRESSING." Mail the coupon.

The Weber Stencil can be typed as a by-product of forms.

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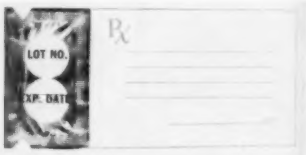
Position_____
Address_____
City_____ Zone___ State_____

formation write: John R. Nalbach Engineering Co., Dept. PE, 6139 Ogden Ave., Chicago 50, Ill. or *circle number on card.*

14—Sample Drug Packet

A blank prescription form is incorporated with a single-dose sample package and is being introduced as IL Scrip-Pak. It is available on all Ivers-Lee drug-sampling unit packages. Advantages of this package pointed out by the producer include: simplifies the prescription-giving task of the physician, reduces possibility of confusion as to the correct name of the drug, and it enables the patient to have a single packet containing both the sample dose and the prescription for the balance of the medication. The unit package will hold solids, liquids, or powders and can be imprinted with identification coding. The packages are made from polyethylene, saran, cellophane, foil, and other film materials. For more information write: Ivers-Lee Co., Dept. PE, 215 Central Ave., Newark, N.J., or *circle number on card.*



15—Random Case Sealer

A new closing machine which adjusts automatically to seal corrugated containers of varying sizes has been announced. Called the Union-Camp K & M Randomatic case sealer, the machine operates at speeds up to 12 cases/min. Its maker says it can seal the top and bottom of a large case (up to 18x20x30 in.) and then automatically regulate itself to close a small container (down to 4x8x10 in.) which may be following on the line. The machine applies a thermoplastic sealant which sets in less than 3 sec. The internal mechanism of

This new easy-opening aluminum top, developed by the Central States Can Corporation, used with a Cleveland Container fibre can, makes a perfect combination! When the tabbed seal is peeled off, a smooth edge remains, ensuring a tight fit when top is replaced.

Two diameters ready for immediate delivery! An important advantage exists for products which can be packaged in cans with inside diameters of 2⅜" and 3⅞" because tooling is now available on these two popular sizes.

Containers engineered to exact product needs

Strong fibre containers can be made to any height and specification — **and at low unit cost!** Choice of labels for distinctive identification. Moisture and greaseproof, and anticorrosive liners for added protection.

Combination is ideal for hundreds of products

This seal-and-recap top, used with economical fibreboard, suggest a wide range of packaging applications, such as popcorn, surgical dressings, greases, spare parts, powders, dog food and numerous other products.

Write for a copy of our NEW Packaging Brochure.

THE

CLEVELAND CONTAINER COMPANY

6201 BARBERTON AVE. • CLEVELAND 2, OHIO

ALL-FIBRE CANS • COMBINATION METAL AND PAPER CANS
SPIRALLY WOUND TUBES AND CORES FOR ALL PURPOSES

CLEVELAND CONTAINER CANADA, LIMITED
Plants & Sales Offices: Toronto & Prescott, Ont. • Sales Office: Montreal

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WHEN THE PRODUCT YOU PACKAGE IS

STICKY

PATAPAR RELEASING PARCHMENT WILL PROVIDE THE "LET-GO" YOU NEED

Here, the packager has to worry about a substance whose moisture and sugar content results in extremely adhesive qualities . . . but the product must never stick to its container. Patapar Releasing Parchment provides the needed combination of resistance to moisture and sugar penetration, and low adhesion factor.

Other Patapar Releasing Parchments provide quick release for foodstuffs such as frozen meats, where ice makes separation difficult . . . plastics, where extreme temperatures and inherent tackiness make it necessary to include the releasing parchment in the production process . . . and adhesive materials, where the product can stick to itself or its user.

Send for free samples of Patapar Releasing Parchments and informative brochure describing the whole Paterson line of Releasing Parchments.

Patapar®
RELEASING PARCHMENT

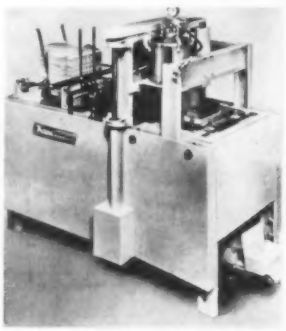
PATERSON PARCHMENT PAPER COMPANY
BRISTOL, PENNSYLVANIA

Sales Offices: New York, Chicago, Sunnyvale — West Coast Plant: Sunnyvale, California

the machine moves within the limits of the box sizes for which it is designed. As a container enters the machine, the mechanism moves in from its outer limits until it meets the resistance of the container. Once this case is sealed, the mechanism returns to its outer limits and awaits the next unit. Regardless of the sequence of case sizes, the machine will adapt itself by moving in until it is properly set to close the case. The filled cases enter the machine on a conveyor with bottom flaps folded but unsealed and top flaps unfolded. Floor space required for the case sealer is approximately 5x7 ft. For more information write: Union Bag-Camp Paper Corp., Dept. PE, 233 Broadway, New York 7, N.Y., or *circle number on card.*

16—Carton Former

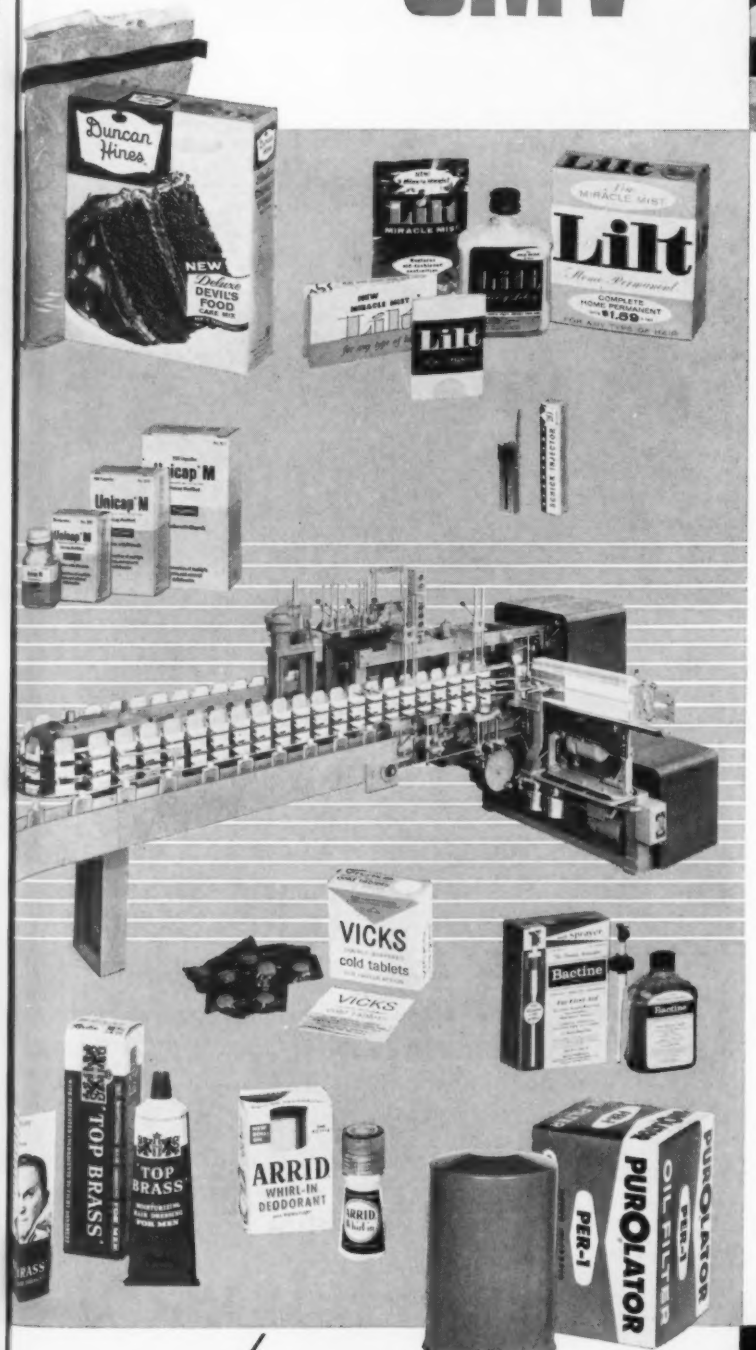
A new technique for changing over from one carton or tray size to another for the Model PG



carton and tray forming machine has been developed. The new method is reported by the manufacturer to reduce the time required for changeover from one hour to five minutes. The machine operates at speeds up to 70 cartons/min. (formed from carton blanks) and will handle carton and tray blanks from 5 to 22 in. long and 3½ to 18 in. wide. With the new method, entire assemblies are replaced instead of being adjusted while in the machine. When a size changeover is needed, the operator loosens the hand-turn fasteners

constant motion vertical cartoner

JONES CMV



Semi-automatic machine for cartoning bottles, pouches, tubes and odd-shaped products.

Speeds 18 to 120 cpm.

The Jones CMV is used by over 200 manufacturers of pharmaceutical, food, cosmetic, chemical, automotive, electrical, electronic and other hard-to-carton products. It automatically feeds and opens the flat, tuck style carton, closes the bottom, and (after the product has been loaded manually) closes the carton.

The operator merely loads the product (typical rate: 60 to 80 cartons per minute with single-piece loads).

A single CMV accommodates a wide range of carton sizes—as many as 28 different sizes in one instance. Adjustable parts allow one man to change machine from one size carton to another in 30 minutes or less. CMV versatility is particularly welcome with partitioned cartons containing a bottle and dropper, or two tubes or two bottles for special promotions.

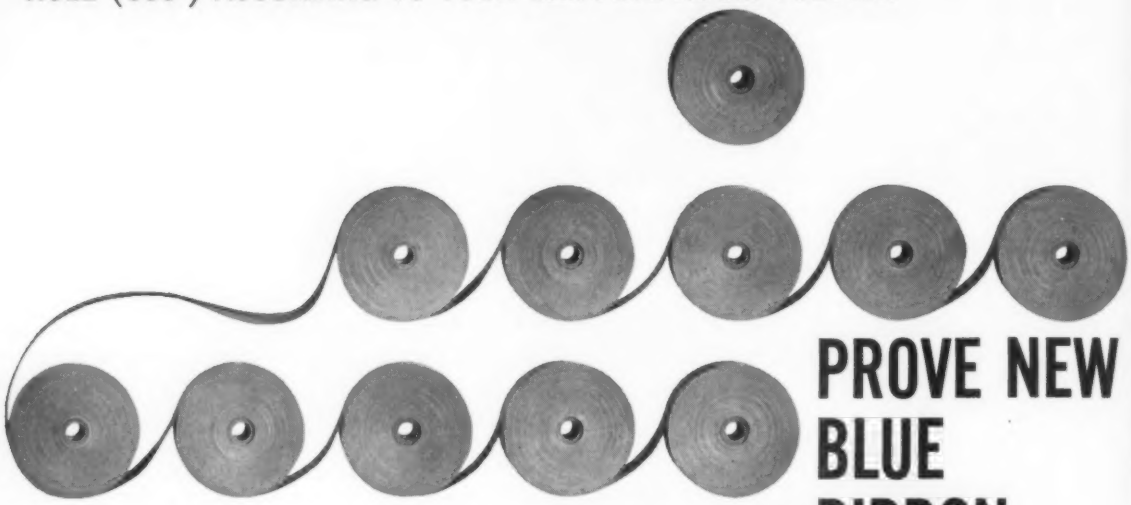
Rotary imprinter, code dater, gluing devices and extra high speed cycling (up to 150 cpm) can be integrated into the CMV for even greater productivity and reduced labor costs. For complete information, write us outlining your requirements. R. A. Jones & Co., Inc., P. O. Box 485, Cincinnati 1, Ohio.

Branch Offices: New York, Chicago, Atlanta, St. Louis, Los Angeles, San Francisco, Seattle, Dallas, Mexico, Montreal.

R. A. JONES & COMPANY, INC

Cartoning Machines - Case Packe

BLUE RIBBON WITH HIGH SPEED RENACEL-100 ADHESIVE WETS OUT FASTER, TACKS QUICKER, BONDS MORE PERMANENTLY TO CARTONS THAN ANY OTHER SUPER STANDARD TAPE EVER MADE. IT IS ODORLESS AND COLDPROOF TOO. IN YOUR PACKAGING OPERATION BLUE RIBBON CAN MEAN LOWER LABOR COSTS, INCREASED PRODUCTION, GREATER SAFETY IN TRANSIT. **BUT CLAIMS ARE NOT PROOF!** ■ HUDSON OFFERS YOU THE OPPORTUNITY TO EVALUATE BLUE RIBBON PERFORMANCE BY TESTING 6000 FEET OF TAPE OR ONE FULL ROLL (600′) ACCORDING TO YOUR SHIPPING ROOM VOLUME.



PROVE NEW BLUE RIBBON

OUTPERFORMS ALL SUPER TAPES

TEST FREE 600 TO 6000

FEET ON YOUR PRODUCTION LINE

Hudson Pulp & Paper Corp. BR-P-4
477 Madison Avenue, New York 22, N. Y.

Gentlemen:
We would like to test Blue Ribbon super standard tape with new RENACEL-100 adhesive. Based on the information below supply FREE test quantity at once.

Products Packaged _____

Carton Sizes _____

Average Monthly Carton Shipments _____

Brand of Present Tape Used _____

Your Name _____ Title _____

Company _____

Address _____ City _____ State _____

BLUE RIBBON SUPER STANDARD WITH NEW RENACEL-100 ADHESIVE is a product of HUDSON PULP & PAPER CORP. ... for over 30 years the leader in quality branded gummed sealing tape.

PROVE NEW BLUE RIBBON PERFORMANCE IS BETTER THAN THE CLAIM. WRITE FOR YOUR TEST PROGRAM SUPPLY.

HUDSON
PULP & PAPER CORP.

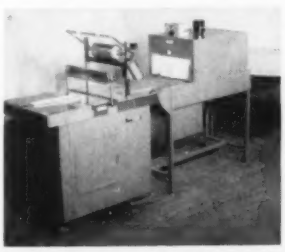
and removes the carton blank magazine, pusher bar, gluing assembly, forming run, and forming mandrel. Each of these is replaced with a new assembly for a specific carton size. Another feature of the machine is that it has a closed glue system. For more information write: Peters Machinery Co., Dept. PE, 4700 Ravenswood Ave., Chicago 40, Ill., or *circle number on card.*

17—Creped Paper Tape

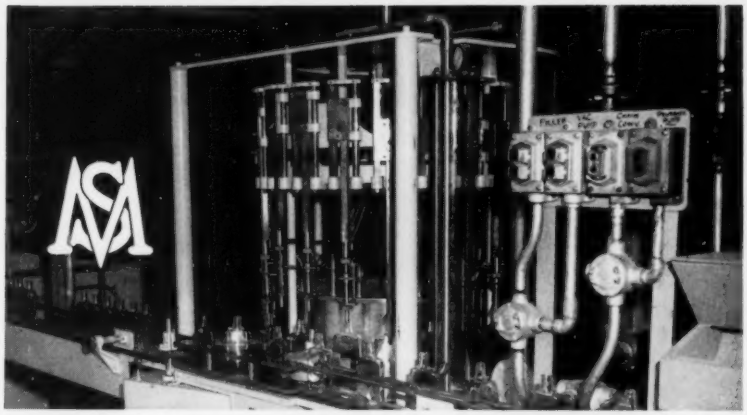
A general-purpose, creped paper tape is being produced in a variety of colors. Arno's C-659 tape has a high-tack, stain-resistant, rubber-based, pressure-sensitive adhesive, its maker states. The tape is available in red, yellow, blue, green, and pink. In addition to other applications, the tape is useful for identification and coding of materials. The creped tape has a thickness of 0.008 in., its adhesion to steel is 25 oz./in. width, and adhesion to backing is 20 oz./in. width. Tensile strength is 20 lb./in. width and elongation is 8 to 10 per cent. For more information write: Arno Adhesive Tapes, Inc., Dept. PE, P. O. Box 301, Michigan City, Ind., or *circle number on card.*

18—Shrink-Wrap Packager

Announced is a machine to wrap packages in shrinkable film at speeds up to 20 packages/min.



The machine, called the Tresco-Wrap SW-12, uses two rolls of film in any width up to 16 in. The wrapper, which is mechanically operated, makes a sleeve or band of film which shrinks tight around the package, but



VERSATILITY AT LOW COST
A Machinery Service Filler

- ✓ Fills any variety of free flowing and semi-viscous liquids, light or heavy, foamy or syrupy
- ✓ Fills glass, tin or aerosol containers—conventional or odd-shaped
- ✓ Fills capacities from 1 oz. to 1 gal.—quick adjustment of positive height control
- ✓ Adapts easily to any speed range by changing rate of filling operation
- ✓ Adjusts simply for container change-overs, does not require a mechanic
- ✓ Range of models fits every need—8, 12, 16, 18, 24, 36, or 48 tubes
- ✓ Requires a minimum of clean-up time—just wash out reservoir

When you want Versatility on your liquid filling line an MS Rotary Vacuum Filler is the answer. It provides maximum flexibility to fulfill a wide range of filling requirements successively with a minimum of loss of production. It makes even special package runs profitable.

What's more the MS Filler saves you money on the initial capital investment, and being fully automatic it offers immediate savings in direct labor. Also it requires but simple upkeep so holds down maintenance costs and reduces down time waiting for repair parts. This all adds up to lower packaging unit cost.

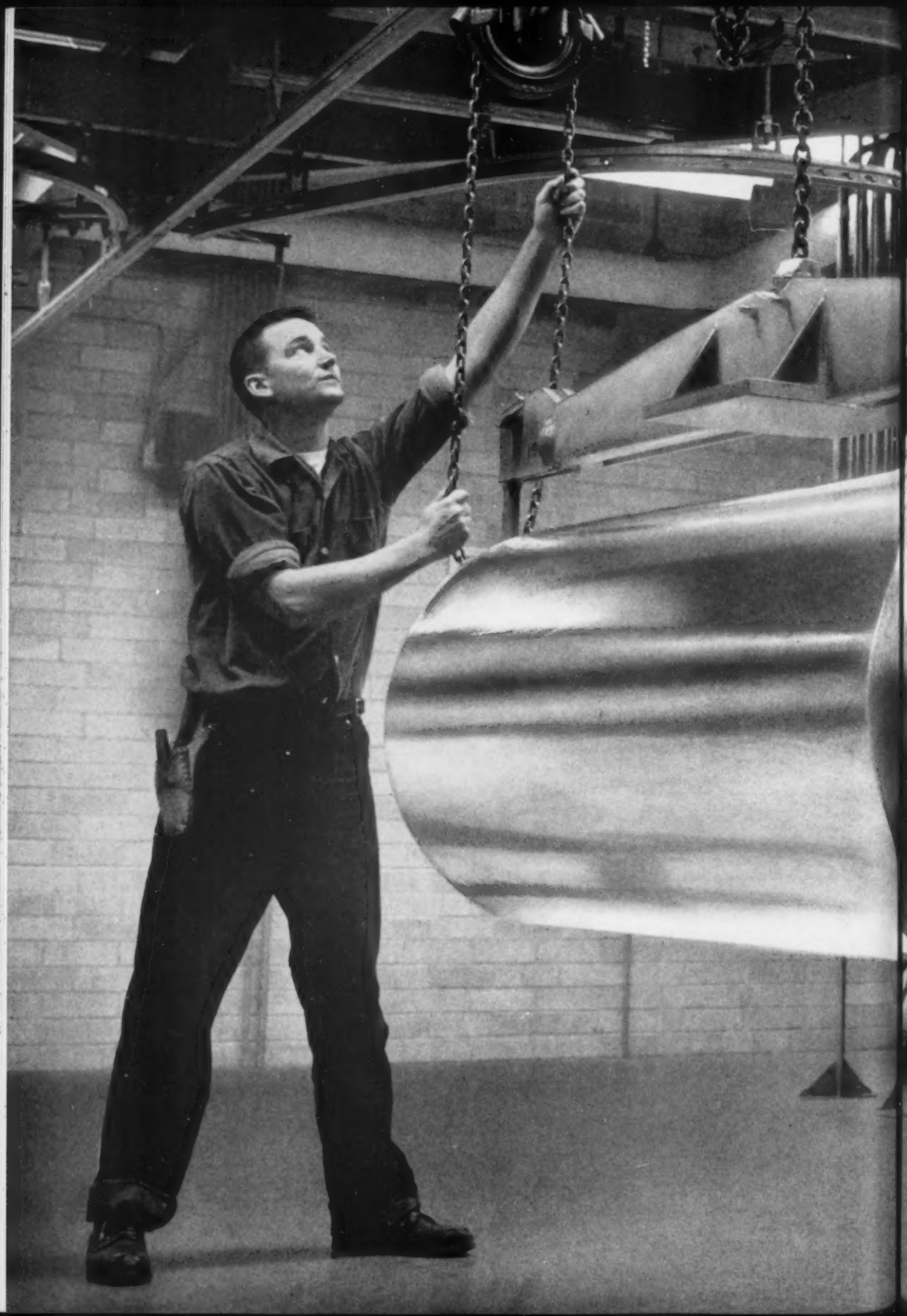
Standard equipment consists of stainless steel contact parts, choice of worm feed screw or positive timing star wheel, all attachments for one size container and vacuum pump. Write for new bulletin, "MS Filling Line Profit Makers."

MODEL (No. tubes)	12	8G	12G	16	20	24	18G	36	24G	48
SPEED (with water)										
Pints per min.	120	80	120	160	200	240	180	360	240	480
Quarts per min.	60	40	60	80	100	120	90	180	120	240
Gallons per min.		20	30				45		60	
MAXIMUM SIZES										
Round Container Dia.	4⅜	6½	6½	5¼	4⅜	3¾	8	4¾	7	3¾
F Style center hole										
Pts. (1¾ x 3⅞)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Qts. (2⅜ x 4⅝)	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
Gals. (4⅛ x 6⅝)	No	Yes	Yes	No	No	No	Yes	No	Yes	No
FLOOR SPACE										
Height	78¼	78¼	78¼	78¼	78¼	78¼	78¼	78¼	78¼	78¼
Width	41	47	47	47	47	47	47	84	84	84
Depth	36	47½	47½	47½	47½	47½	47½	86½	86½	86½

Economic Machinery Company

60 FREMONT ST., WORCESTER 3, MASS.

Division of Geo. J. Meyer Manufacturing Co.



Du Pont cellophane makes news...

9 new cellophanes since the 1960 Packaging Show!

Still more cellophanes from Du Pont research—to meet new, ever-changing packaging needs. Today, packagers can choose from over 100 Du Pont cellophanes! Each one is sparkling-clear. Each one prints beautifully. Each one gives maximum efficiency. Yet—there are important differences. WVT rates vary. So does durability. Some seal at temperatures 50° F. less than previously. Some are polymer-coated, extra-tough. Some are ideal substrates.

The point is: Du Pont cellophane is many, many films. Different coatings give different properties, make each cellophane a different film. Right now, there are over 100. And we have many more in the works.

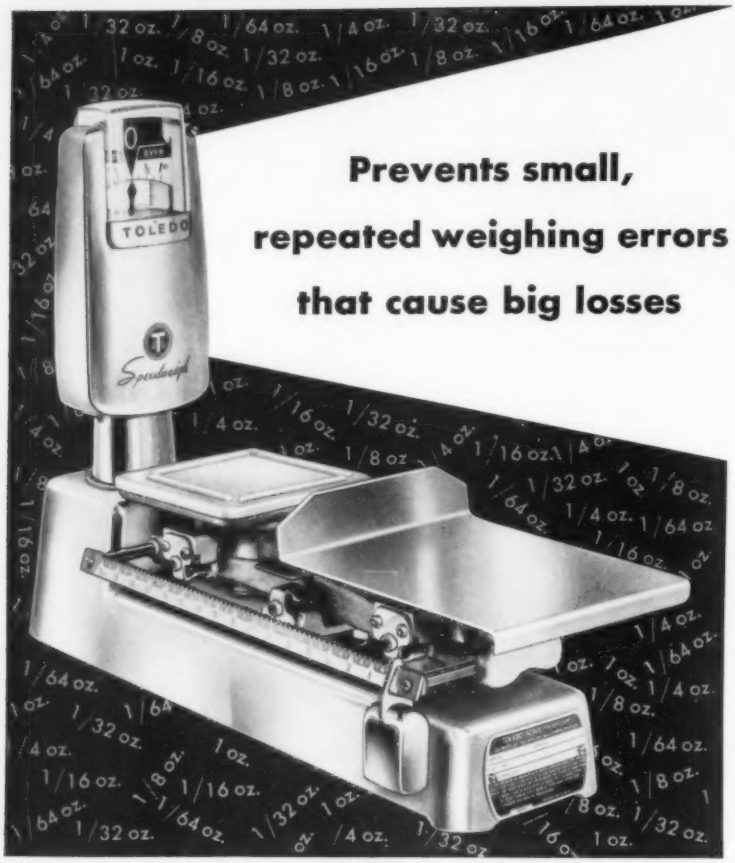
Have you checked lately? There's a good chance you'll find a special Du Pont cellophane that will give you better, more protective packaging at lower cost. Call your Du Pont Representative or Authorized Converter. Du Pont Co., Film Department, Wilmington 98, Delaware.

DU PONT

REG. U.S. PAT. OFF.

DU PONT cellophane

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY



Model 3012

NEW TOLEDO SPEEDWEIGH®

For Checkweighing, Filling, Counting-by-weight

If there is *any* chance that your profits are being drained off by small, repeated errors in weighing items to 5 lbs., here's the solution. Police your weights with the new Toledo Speedweigh Model 3012. • Sensitive to 1/64 oz. Available with side, end or 45° indication, Model 3012 will do away with costly errors in checkweighing, filling, weight-counting and weighing to predetermined quantities. • The flush indicator and clear plastic cover on tower give you crisp, accurate readings without parallax errors. Indicator travel is regularly one inch per oz. and chart is readable from either side. What's more, compact, rigid construction makes Model 3012 a natural for crowded production lines . . . allows it to be moved about to fill on-the-spot weighing needs without releveling in normal use. Corrosion-resistant materials used throughout for long-life accuracy and reliability. SEND for Bulletin 2112 today.

SPEEDWEIGH MODEL 3012 OFFERS OUTSTANDING ADVANTAGES

Versatile . . . indicator tower in your choice of facing directions (end, side or 45°). Wide selection of commodity equipment. Double beams available.

Sensitive . . . to 1/64 oz. Maximum platter drop of 1/16" under full load for high speed indication.

Heavy-Duty Construction . . . All parts highly resistant to corrosion, chipping and rust. Low center of gravity. Choice of attractive finishes. Movable without releveling.

SERVICE Factory-Trained 340 Cities

TOLEDO® *Headquarters for Weighing Systems*

TOLEDO SCALE, Toledo 12, Ohio

Division of Toledo Scale Corporation

(Toledo Scale Co. of Canada Ltd., Windsor, Ontario)

it does not close the end completely. The manufacturer recommends it for grouping items to be sold as one package, tie-in sales of new items, and other such applications. For more information write: The Trescott Co., Inc., Dept. PE, Fairport, N.Y., or *circle number on card.*

19—White Polyethylene

A 45-per-cent concentrate, white polyethylene has been introduced which can be blended with polyethylene extrusion and film resins to suit specific end-use requirements. White polyethylene for film and extrusion coating, the company says, combines the toughness, heat sealability, and moisture resistance of polyethylene with a smooth, bright surface. Its primary uses are for packages where visibility is not needed and to upgrade such substrata as kraft board and paper, foil, and cellophane. Designated Monsanto polyethylene 6407, the new concentrate is compounded with Monsanto polyethylene 70 and a rutile titanium dioxide pigment. For more information write: Monsanto Chemical Co., Plastics Div., Dept. PE, Monsanto Ave., Springfield 2, Mass., or *circle number on card.*

20—Aluminum Bottles

Recently available are 28 assorted stock sizes and shapes of seamless aluminum bottles for

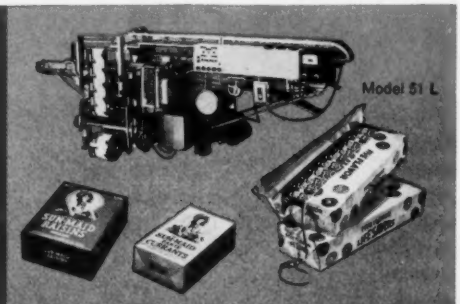
packaging chemicals, minerals, and foods. The finish of the bottles is a commercial caustic etch—chromic or sulfuric anodizing is optional. Capacity is measured to body height and openings include those tapered to fit standard cork sizes and threaded types which are threaded to the specifications of

BATTLE CREEK'S MODEL 51 SERIES PROVIDES

SPEED WHEN SPEED COUNTS!

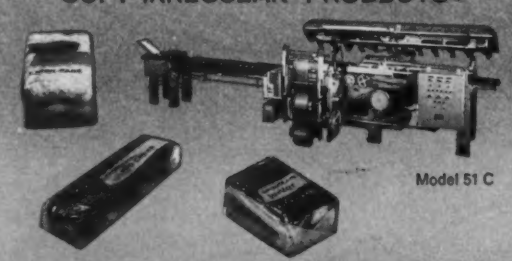
Here are six Model 51 machines "tailored" to solve individual packaging problems created by the inherent nature of the product, the high speed demands of prior processing equipment and the need for impelling product sales appeal. One of these models is best suited to precision package your product neatly, tightly in heat-sealing cellophane, laminated papers, wax-coated papers or heat-sealing foils. Each model has the same universal "Continuous Flow" characteristics which offer dramatic labor saving advantages and unique operating economies. All are ideal for long production runs of products within these size ranges: 3¼"—5½" long or 6"—11" long, 2½"—4¼" wide and ¾"—2¼" high. Inquire today about the Model 51 series and discover what Battle Creek Packaging Machines can do for you.

eliminate frustrating production bottlenecks with overwraps of 120 to 240 per minute

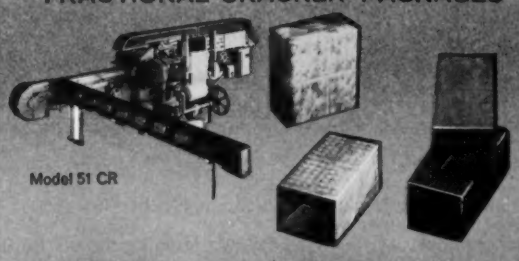


GENERAL RECTANGULAR APPLICATIONS

SOFT IRREGULAR PRODUCTS



FRACTIONAL CRACKER PACKAGES

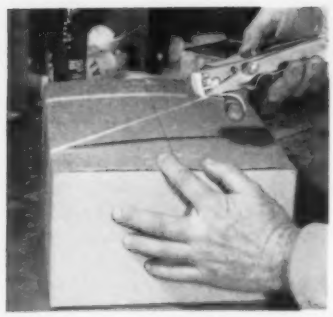


Continuous Flow® PACKAGING

BATTLE CREEK *packaging machines, inc.*.. BATTLE CREEK, MICH

PMMI

BEMA



Tough strapping tape cuts costs

MYSTIK BRAND

6497 SUPER FLEXTRON STRAPPING TAPE

■ Are you using conventional, hard-to-handle strapping material? The chances are you can save time and cut costs with Mystik's Super Flextron tape!

It's a rugged pressure-sensitive tape of outstanding performance. Bi-directionally reinforced with woven glass webbing, it has an extremely high tensile strength and can safely handle heavy duty packing and strapping jobs with less tape, lower cost. Super Flextron is waterproof and is protected with a transparent film. Resists aging, oils, solvents and stains. Quick to apply and simple to peel off, it speeds up your packaging and shipping operations.

Find out how Mystik Brand Super Flextron Strapping Tape can cut your packing costs. Write today for eye-opening details on 6497 and the complete Mystik Brand line of economical packaging tapes.

MYSTIK® TAPE SELF-STIK

MYSTIK ADHESIVE PRODUCTS, INC.
2635 N. KILDARE AVENUE • CHICAGO 39

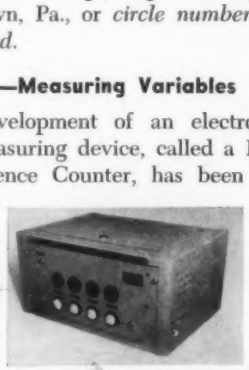
glass containers. Advantages listed by the manufacturer are: elimination of product loss due to breakage, protection of light-sensitive products, safety in handling, lowered shipping costs due to lighter weight, and others. For more information write: American Aluminum Co., Dept. PE, 230 Sheffield St., Mountainside, N.J., or *circle number on card.*

21—Plastic-Coated Pads

A macerated paper pad faced on one side with polyethylene-coated kraft is being marketed. The maker states the polyethylene coating provides a chemically inert and moisture-resistant surface that can be placed against most any product without harm to the surface. Consisting of 0.0005-in. polyethylene over 40-lb. natural asphalting kraft on one side and the plain kraft of the same type on the other, the pad is available in maceration weights of 1,000, 1,200, and 1,500 lb./million sq. in. It can be supplied in a range of sizes up to 48 in. wide by 200 in. long. For more information write: Boyertown Packaging Service Corp., Dept. PE, Boyertown, Pa., or *circle number on card.*

22—Measuring Variables

Development of an electronic measuring device, called a Difference Counter, has been re-



ported. Its manufacturer claims the unit is capable of measuring two different variables simultaneously and provides instant visual indication of the difference between the two. The manufacturer indicates that one application for the measuring device would be to monitor two different shafts to maintain a

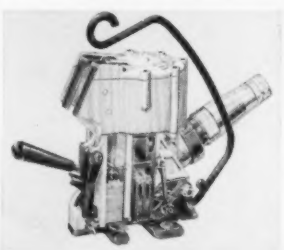
desired r.p.m. difference between the two. Should one or the other overrun or fail to maintain its required speed, the measuring device would indicate this condition and react, by external circuitry, to make necessary corrections or shut down the operation automatically. The device can be equipped to read variance in angle of degrees, r.p.m., inches, feet, or other units of measure. For more information write: Post Electronic Products, Dept. PE, 140 Elliott St., Beverly, Mass., or *circle number on card.*

23—Skin-Pack Polyethylene

A new polyethylene film, which the maker claims has exceptionally high clarity, is being introduced for use in skin packaging, blister packs, and vacuum forming. This film, called Poly-Skin, is a treated polyethylene available in clear cast sheeting. When using the proper board and printing inks, no coating or perforating is necessary for skin packages, the maker states. For more information write: Flex-O-Glass, Inc., Flex-O-Film Div., Dept. PE, 1100 N. Cicero Ave., Chicago, Ill., or *circle number on card.*

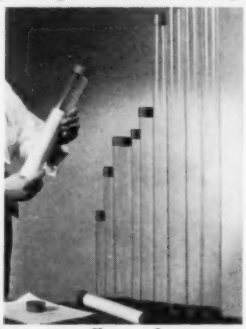
24—Portable Strapping Tool

The AMP, a portable all-power-operated combination strapping tool, has been introduced. Previous models utilized pneumatic or electric power for the tensioning cycle, but this new strapping tool uses air power which engages the feed wheel, tensions the strapping, applies the seal, cuts the strap from the coil, and disengages the feed wheel. Developed for this steel strapping tool is a new self-interlocking, nested seal that the maker claims simplifies loading into the tool and permits loading of partial stacks. Strap tension is adjustable to 1,200 lb. at 90 lb./sq. in. for both 5/8- and 3/4-in. strapping. For more information write: Signode Steel Strapping Co., Dept. PE, 2600 N. Western Ave., Chicago 47, Ill., or *circle number on card.*



25—Plastic Tubes

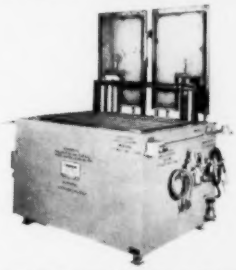
A new series of transparent tubes, extruded from Tenite butyrate plastic, are said by the maker to offer advantages in both packaging and storage use. Applications for these containers include packaging of tools, maps, lingerie, and other soft goods. The maker claims the tubes, which resist rough handling and moisture, make protective storage packages for electronic parts, drill bits, charts, blueprints, and the like. Transparency of the plastic permits easy identification of contents. These tubes are available in various diameters and lengths. Friction caps of red polyethylene seal the tube ends. These tubes are manufactured by National Plasticrafters, Inc., Sheboygan, Wis. For more information write: Eastman Chemical Products, Inc., Plastics Div., Dept. PE, 260 Madison Ave., New York 16, N.Y., or *circle number on card.*



26—Vacuum Former

A vacuum forming machine in a new production size for skin

On Your Way
to the
Packaging Show
Stop & See
TANKS by COOPER
At 1467 S. Michigan Ave.

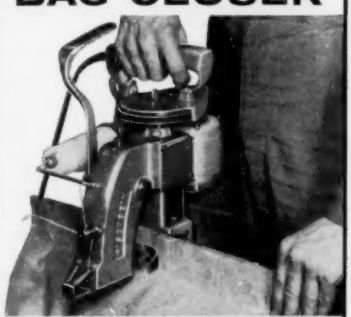


Let us show you how to solve your metal preservation problems with our plastic and wax dip tanks. Also, rust-proofing, cleaning, and many other types of packaging equipment.
Jobbers and distributors wanted.

D. C. Cooper Co.
Phone: HA 7-8046
Chicago 5, Illinois

Circle No. 310 on Card

FISCHBEIN®
Portable
BAG CLOSER



LOW COST! EFFICIENT! VERSATILE! Handles all types of bags. Total weight only 10½ lbs. Requires no installation . . . merely plug into any outlet.

WRITE FOR COMPLETE CATALOG FILE OF FISCHBEIN BAG CLOSING EQUIPMENT

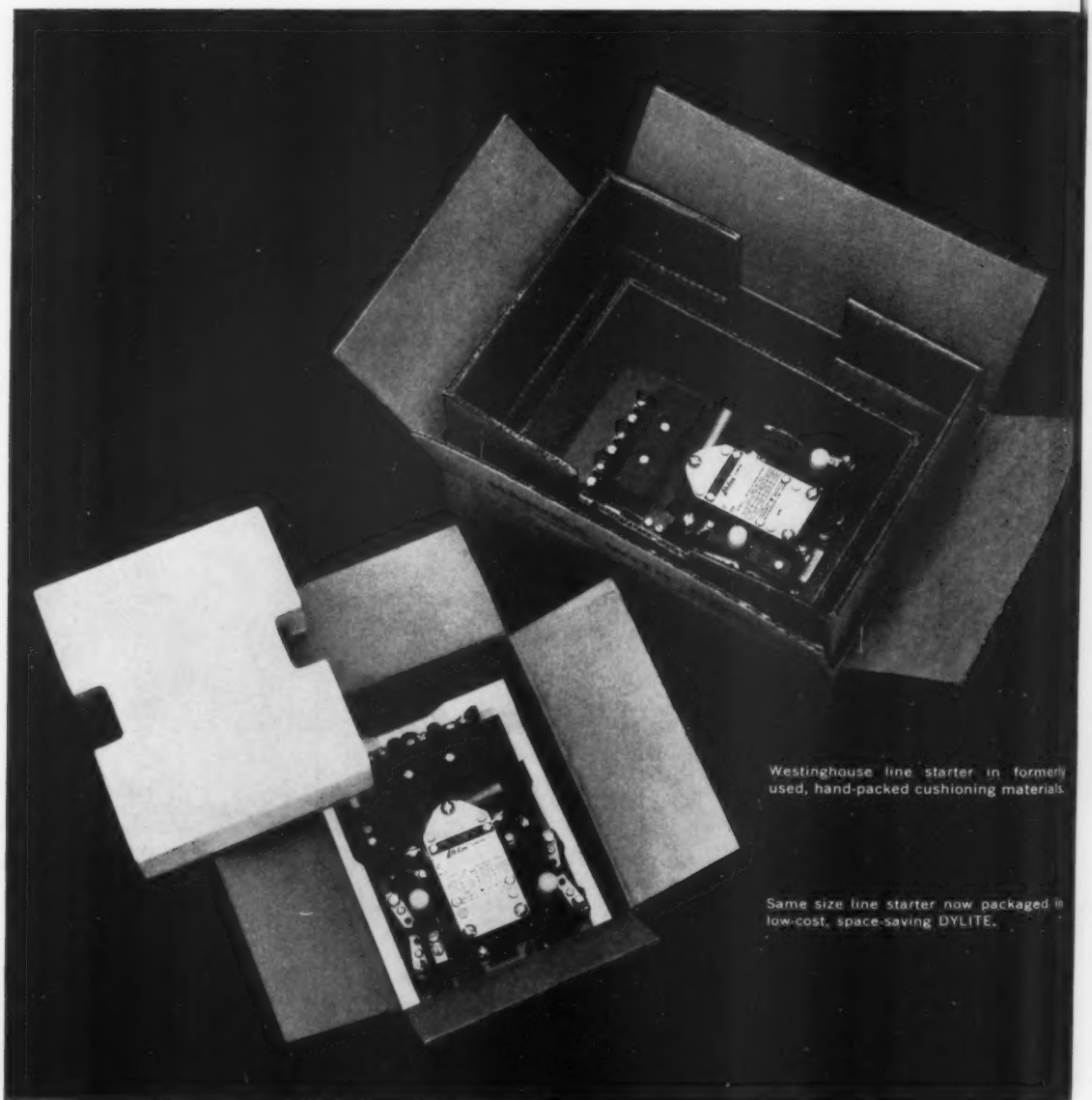
DAVE FISCHBEIN CO., Dept. PE
2720 30th Ave. S., Minneapolis 6, Minn., U.S.A.

Circle No. 311 on Card

Westinghouse cuts package size in half

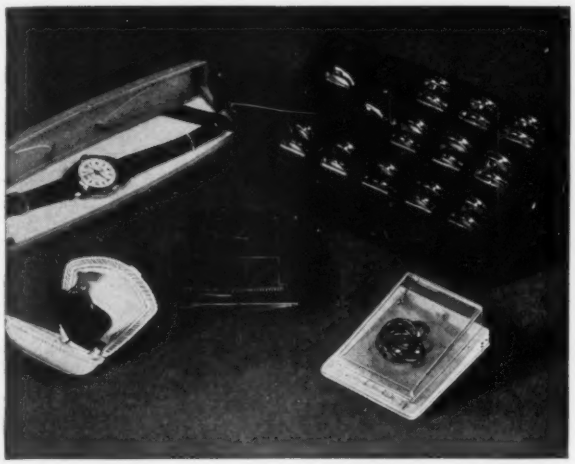
This Westinghouse motor starter is cushioned in pads of DYLITE® expandable polystyrene. DYLITE pockets this delicate instrument better than previously used molded pulp and corrugated boxboard materials. It enables Westinghouse to cut their package size 50% . . . and reduce material, labor and shipping costs.

A DYLITE package is extremely lightweight . . . it's easy to pack and load. This amazing plastic is waterproof, non-dusting and it's an excellent thermal insulator. DYLITE can be molded easily to almost any size or shape. It can be colored and decorated, too. Use it as a cushioning material in *all* types of shipping containers. *DYLITE parts molded by Expandable Plastics Corporation, Akron, Ohio*



Westinghouse line starter in formerly used, hand-packed cushioning materials.

Same size line starter now packaged in low-cost, space-saving DYLITE.

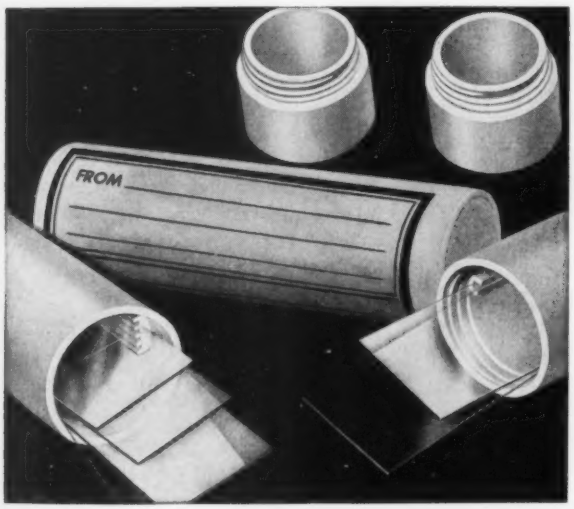


Jewelry cases with display appeal

Quality products deserve an individually tailored display case to compliment their beauty and value. These attractive Rocket jewelry cases provide such sales appeal.

The cases are molded from DYLENE® polystyrene, a Koppers plastic that is ideal for packages demanding dimensional stability, protection and precision engineering. DYLENE has inherent strength and impact resistance. It permits a variety of surface textures, colors, shapes and molds easily for unlimited packaging applications.

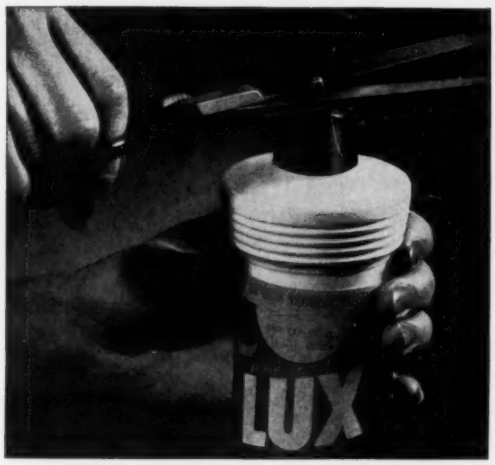
DYLENE cases manufactured by Rocket Jewelry Box Co., New York 51, N. Y.



Container keeps glass slides safe

You can drop this SUPER DYLAN® container on a concrete floor and the glass micro slides inside won't break. Precision-molded grooves hold the slides firmly in place; the heavily-threaded cap screws tight preventing the slides from moving up and down. The container is lightweight, attractive and rugged. It won't chip or dent.

This SUPER DYLAN high-density polyethylene container needs no interior cushioning materials. It's convenient to store, easy to ship; it cuts mailing costs. And because this plastic is heat resistant, the container can be sterilized and reused. *SUPER DYLAN containers molded by Monrovia Plastics, Monrovia, Calif.*



New cap has a "snip-off" tip

With this new DYLAN® polyethylene cap, housewives just cut off the tip and get a measured flow of Liquid Lux with every squeeze of the bottle. It eliminates bothersome measuring by capsful. The new "snip-off" cap tightly grips a threaded neck on the plastic bottle... no drips, no leaks.

DYLAN polyethylene has a smooth, glossy finish. It won't chip or dent. DYLAN is durable, lightweight, rust-proof, and has good chemical resistance. It molds easily to any size, shape or color closure. This versatile plastic adds consumer appeal to the top of *any* detergent, cosmetic, food, chemical or pharmaceutical package. *DYLAN caps molded by Augusta Plastics, Inc., Bronx, New York · Formold Plastics, Blue Island, Ill. · Gibson Associates, Inc. Cranford, N. J.*

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Dept. 144, Koppers Bldg.
Pittsburgh 19, Pennsylvania

Send me information on the following Koppers plastics:

- ☐ DYLITE® expandable polystyrene
- ☐ DYLAN® polyethylene
- ☐ SUPER DYLAN® high-density polyethylene
- ☐ DYLENE® polystyrene

Name_____

Company_____

Address_____

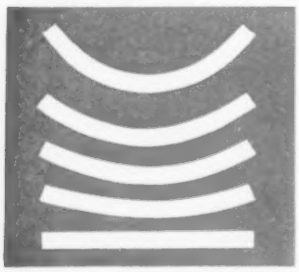
City_____ **Zone**_____ **State**_____

The MIRACLE of

STAB-U-CEL®

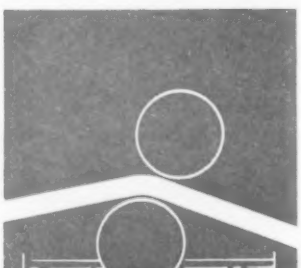
New chemical speeds-up labeling and packaging operations by controlling paper curl.

STAB-U-CEL, a patented chemical that dimensionally stabilizes paper, has met with bright, initial success as a cure for paper curl. Stab-U-Cel penetrates into the paper, effectively locking the cellulose molecules in place. They cannot expand or contract although normal sorption continues. Paper does not curl.



Any degree of curl control can be provided by variations of Stab-U-Cel's concentration from 2% to 50%. Usage ranges from "kiss" application on one or both sides for outer fiber layer stabilization to immersion and thorough penetration for total dimensional stabilization. Stab-U-Cel can be easily applied in an aqueous solution.

Packaging Applications include coated and laminated papers. Both converters and paper mills employ Stab-U-Cel to provide curl controlled end papers. In addition, Stab-U-Cel is effectively used in many specialty paper fields . . . including photographic and reproduction papers, backing and release papers, paper cores, and other applications where curl problems exist in paper and cellulose fiber materials.



Other physical characteristics such as strength, sizing, softness, etc., can be controlled by additives or modifications of the Stab-U-Cel solutions.

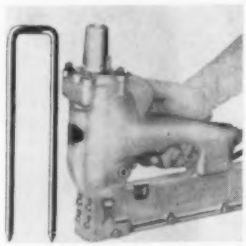
WRITE FOR TECHNICAL BULLETINS. ***Our research laboratories are at your service. Problems urgent? Phone today.***

PRODUCTS OF ADVANCED RESEARCH
UPSON CHEMICAL CORPORATION
100 UPSON POINT LOCKPORT, N. Y.

packaging applications has been announced—the Orbit Plastic-Pak machine, designed for semi-automatic, medium production. Applications include skin packaging, bubble packaging, and the production of vacuum-formed products. The unit has a mold area of 14x20 in., roll-feed attachments, and handles all plastic films on coated or uncoated skin-packaging boards. It covers a floor area of 21½x15½ in. For more information write: Frank R. Ferris Co., Dept. PE, 4026 N. Figueroa St., Los Angeles 65, Calif., or *circle number on card.*

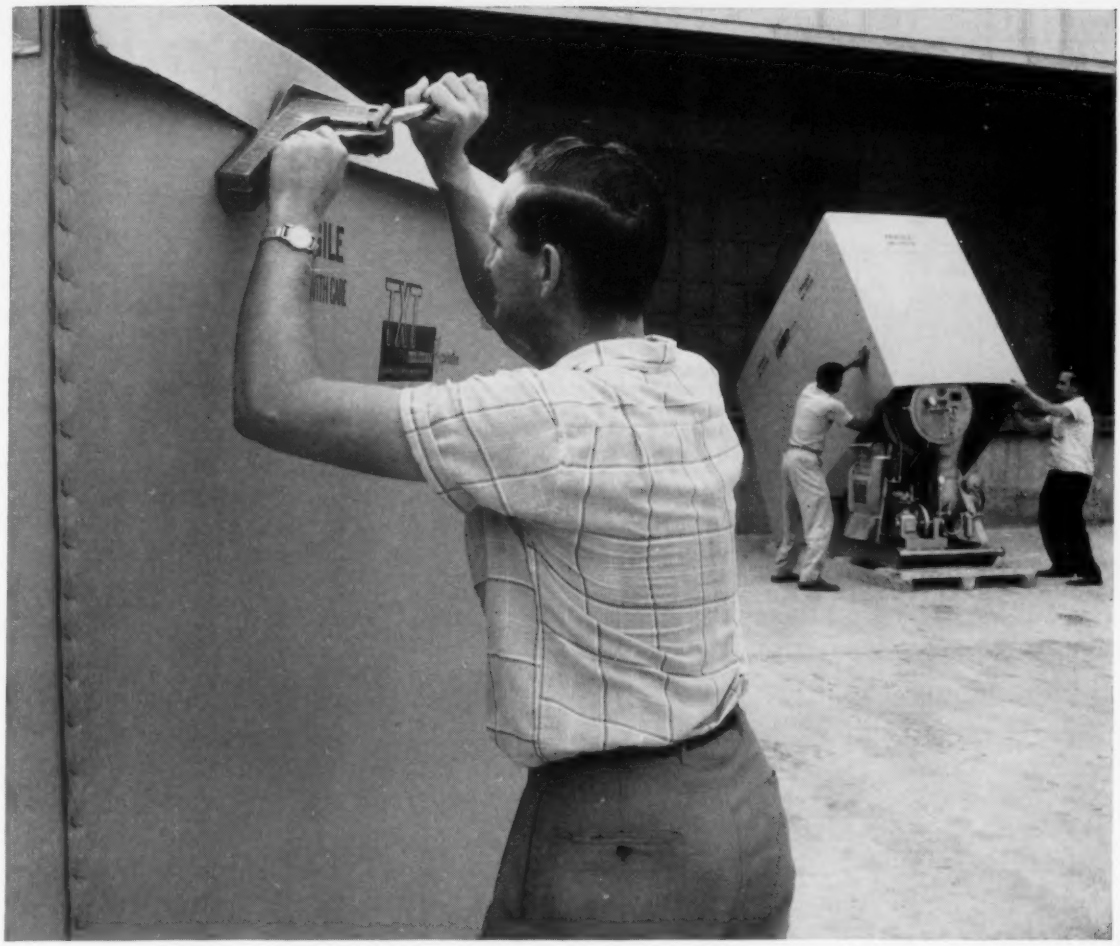
27—Heavy-Duty Staplers

Portable, pneumatic stapling or nailing guns which use staples up to 2 in. long have been announced. These guns may be used to build or repair crates, boxes, pallets, and other fibre and wood containers, thereby cutting down the nailing time. Divergent chisel DC staples, up to 2 in. long, are said by the maker to increase pull-out strength since the legs "fish-hook" as they are driven in. The air-driven staples do not split the wood, and the two legs of the staples more than match the holding power of a single nail, according to the maker. For more information write: Spotnails, Inc., Dept. PE, 1527 Lyons St., Evanston, Ill., or *circle number on card.*



28—Thermal Impulse Sealer

A newly developed, compact thermal-impulse sealing machine, intended for bench mounting, has been announced. Designed primarily for sealing



Container manufactured by Owens-Illinois

For ton-and-a-half oil heaters—

Giant Bostitch-stapled carton slashes packing costs 50%

Texsteam Corporation, Houston, Texas, used to ship 3000-pound oil heaters in wood crates. Each crate was built around a heater and was the size of a small room . . . seven feet long, seven feet high and three feet wide. Crates were costly to make and to ship. They were heavy, time-consuming to build and hard to handle. Here's how Bostitch helped.

An unusual—and unusually large—corrugated container proved to be ideal. It's a sleeve with a Bostitch-stapled seam. A cap, stapled in place, forms the top. The burner is bolted on a wood pallet, then sleeve and cap go over the burner. A heater can be packed in a fraction of the time.

Texsteam reports savings of 50% for the new container over the old. The new carton weighs less and has cut freight costs substantially. Shipments have been completely damage-free.

Texsteam gained many advantages and worthwhile savings in the change to Bostitch-stapled containers. Many companies do. If you would like to know how a change might benefit you, talk to a Bostitch Economy man. To call him, look under "Bostitch" in your phone book. Or write us direct. See how much you can save when you use Bostitch in your shipping room.

Fasten it better and faster with

With every Bostitch machine you get...

the right combination for your needs from 800 staplers and over 200 staples . . . nation-wide parts, service and technical aid backed by the industry's most modern factory . . . assurance that Bostitch products will operate to your complete satisfaction.

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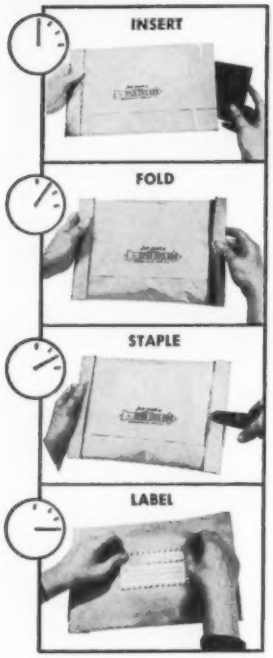
STAPLERS AND STAPLES

864 BRIGGS DRIVE, EAST GREENWICH, RHODE ISLAND

jet-pak®

CUSHIONED-INSULATED SHIPPING BAG

Shatters Direct Labor Cost



JET-PAK sets new packaging speed record of 15 seconds or less per unit—ready for mailing!

New packaging idea for semi-fragile, small products completely destroys old maxim that inexpensive packaging materials cost more in labor.

JET-PAK costs less than almost any other kind of material—yet, its simplicity and completeness as a package eliminates all waste motion, speeds packaging process, drives down labor costs per unit, costs far less to use than any other kind of material.

Security and protection are complete. JET-PAK cushions and insulates with millions of tiny particles of resilient paper held between double walls of tough, moisture-resistant, asphalt-laminated Kraft paper. Contents are safe from damage, pilferage, rain and abrupt temperature changes.

Drop tested by U. S. Post Office, JET-PAK is approved for mailing purposes. Cheaply imprinted at factory, JET-PAK adds impact to advertising programs. Produced in 14 regular sizes, JET-PAK is flexible and available.

JET-PAK is the newest, speediest, safest, *cheapest* way to package small units.

Prove it to yourself!

Score your present method against *jet-pak*

MODERN PACKAGING REQUIREMENTS	*jet-pak*	YOUR METHOD
1 High Security	Approved by U.S. Post Office	
2 Low Material Cost	3¾¢ ea.—10M—No. 3 size	
3 Lowest Labor Cost	Average—15 sec. per unit—ready for mailing	
4 Minimum Waste Motion (supplying materials to bench from storeroom)	One item	
5 Low Cost Imprinting	50¢ per 1,000	
6 Simplified Procurement	1 source	
7 Clean and Attractive	Send for free samples	
Book Mailers of Educational Materials	Free imprint on Jet-Pak Book Bags Save on Postal Rates	

SEND FOR SET OF FREE SAMPLES TODAY!

Clip this advertisement to your letterhead and mail to:

ROPE COLUMBIAN TWINES

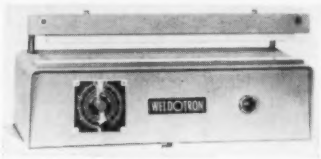
jet-pak

Packaging Division

Columbian Rope Company

Auburn, New York

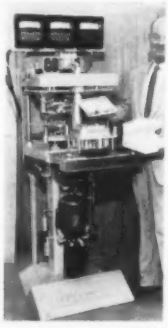
polyethylene materials, it will also seal films such as saran, vinyl, and most thermoplastics.



These foot-operated sealers, available in 16-, 24-, and 30-in. lengths, produce standard seals and tear seals. Pulsing a thin ribbon of high-temperature alloy with a high current for a short time interval achieves a rapid heating effect. After the heating current is cut off, the extremely low thermal capacity of the alloy ribbon results in an effective reversal of heat flow, and a resultant rapid cooling action, the manufacturer states. For more information write: Weldotron Corp., Dept. PE, 841 Frelinghuysen Ave., Newark 12, N.J., or *circle number on card.*

29—Polystyrene Sealer

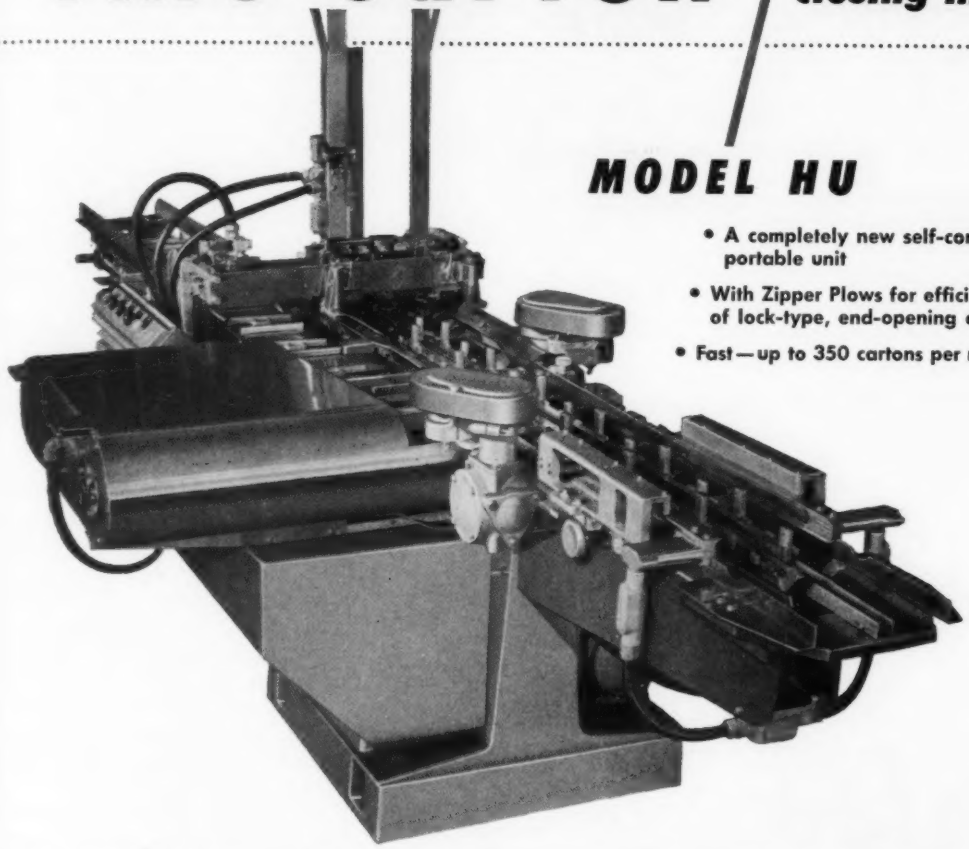
Recently demonstrated, this new machine (the Schjeldahl polystyrene package sealer) forms



shock-proof and crack-proof seals on polystyrene by using high pressure and low heat, and it does not melt or de-orient the plastic, according to its manufacturer. Three temperature controls at the top of the machine regulate the temperatures in three discs—one stationary die above the tray sealer and two revolving trays beneath it. The maker says the machine will turn out up to 13 pack-

NEW fmc carton set up filling & closing machine

MODEL HU



- A completely new self-contained portable unit
- With Zipper Plows for efficient closing of lock-type, end-opening cartons
- Fast—up to 350 cartons per minute

Simply plug it in, fill the carton feed magazine with flat cartons, flip the "start" switches, and your FMC Model HU Carton Handling Machine takes over—giving you one of the smoothest high speed automatic machine operations in your entire plant.

No other carton handler—packaging such products as pies, frozen dinners, ice cream cakes and pizza pies—gives you all these advantages:

1. **High speed** in continuous, automatic operation – up to 350 cpm, depending on product.
2. **Panel-board controlled** for low cost, one man operation.
3. **Trouble-free operation** and long machine life – this is ruggedly designed and precision constructed equipment.
4. **Portable** for roll-around positioning in various working areas.
5. **Versatile**—engineered for quick and easy adjustment to handle a variety of products requiring carton dimensions ranging from 6⅜" to 14" long by 3" to 10½" wide, flaps open.
6. **Sanitary, easy to clean**—constructed of stainless steel and aluminum, and to NEMA 4 Electrical Code.

You're sure to want complete information on this outstanding FMC unit. Write today, or ask your FMC representative to call.

Putting Ideas to Work

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BLISTER-PACK MOVES MERCHANDISE

BUILDS UP CUSTOMER IMPACT, SALES APPEAL

Adds the sparkle of packaging perfection to your product!

— Bubbles and heat seal coated cards by Pan-o-ramic Package, Janesville, Wis. — Heat Seal equipment by Pan-o-ramic Machine Corp., Janesville, Wis.

Just as the container for the Kleensteam water conditioner by Illinois Water Treatment, Rockford, Ill., illustrated here provides a truly visual, lustrous display, so can your products get the benefit of added "punch" at the point-of-purchase. For blister packs of MIDLON "B" have unexcelled beauty, clarity and exceptional strength, give your product new-buy-appeal. Easily and inexpensively formed, MIDLON "B" may be stamped, cut, embossed, laminated, cemented, pressure or vacuum formed. It has rugged toughness, a broad range of colors, light weight and high impact strength.

For your needs in acetate, butyrate or polystyrene, be sure to say, "MIDLON, please!" by Midwest Plastic Products, the nation's oldest, largest exclusive extruder of thermoplastic sheet.

Midwest Plastic products company

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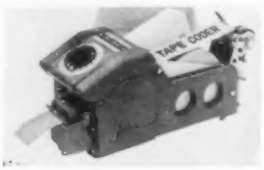
Dept. PE-4
1801 CHICAGO ROAD
CHICAGO HEIGHTS, ILLINOIS

ages/min. containing such items as poultry, meat, cheese, fish, cole slaw, mop heads, and other items. The seal on the package increases shelf-life of refrigerated products from 4 to 7 days up to 22 days, the manufacturer asserts. A feature of the machine permits telescoping of the polystyrene lids to fit the contour of the product within and eliminate air. For more information write: G. T. Schjeldahl Co., Dept. PE, Northfield, Minn., or *circle number on card.*

30—Gummed Tape Printer

One operator can print and dispense gummed tape at the same time with the new 1-C tape



coder attached to a Marsh electric Dial-Taper for sealing containers, according to the manufacturer. The tape printing attachment prints code marks, contents, parts numbers, dates, or trade marks with base-lock rubber type. As an operator dials the length of tape desired, the machine prints the tape, measures it, cuts off the correct length, and applies warm water to the tape which may be either regular kraft or reinforced gummed. For more information write: Marsh Stencil Machine Co., Dept. PE, 34 Marsh Bldg., Belleville 34, Ill., or *circle number on card.*

31—Cushioning Tester

Announced is the development of the Style No. 12-CDT dynamic cushion drop tester. This vertical drop tester consists of a four-corner guide post support assembly, an adjustable cross head and solenoid-operated release mechanism, a lightweight rigid aluminum alloy drop head, and a solid steel ground anvil plate. Cushioning material up

"This new CHASE POLY-PLY multiwall bag is a real Problem Solver"

Says Lee Schram, Multiwall Bag Buyer, Morton Salt Company

The Morton Salt Company needed a new and better bag for its salt shipments—a moisture-resistant bag that would be easier to handle and ship, more flexible at low temperatures, highly resistant to abrasion and rupture, yet economical in cost.

To solve this problem, Chase developed the Poly-Ply Multiwall Bag featuring an entirely new construction. It combines—for the first time—the advantages of a ply of light-weight sheet polyethylene and heavy-duty multiwall paper. It provides excellent moisture protection...extra strength...new ease of handling...flexibility even at temperatures way below zero. After six months testing under commercial conditions Morton officials report highly satisfactory results!

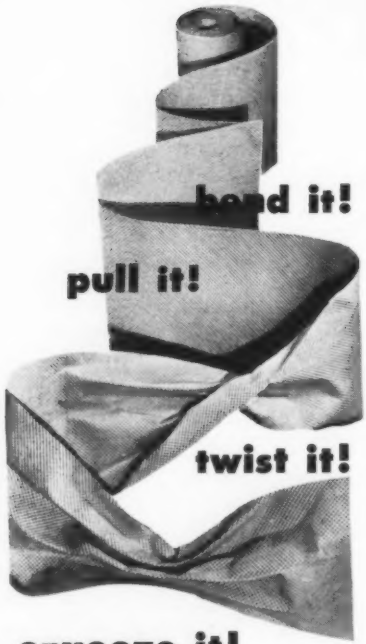
If you package moisture-sensitive products—such as sugar, chemicals or fertilizers—this new bag can be a problem solver for you, too. It is now available in 25-, 50- and 100-pound sizes. Call your Chase representative for full information.

New and Unique Construction: separate, intermediate ply of sheet polyethylene, shielded by heavy-duty kraft paper inside and out, assures effective moisture protection, strength and easy handling advantages.

CHASE BAG COMPANY

355 Lexington Avenue • New York 17, N.Y. • 32 plants and sales offices coast to coast

For more information circle No. 319 on Reader Service Card



Shoksorb

PERMANENT CUSHION PAPER

Deep cushion-molds, formed at the wet end of the paper machine, are the **original** shape of Shoksorb molded indented packing papers. So even when you wrap, wad, or compress this springy, even-fibred, high-quality paper, it tends always to hold and to resume that original cushion-shape. Shoksorb protects your product all the way to destination. Use it for wrapping, lining, interleaving . . . replace bulk dunnage for smaller, safer, neater packages. Comes in several types, weights, any size or shape sheet, rolls. Ask for samples and picture-catalog.

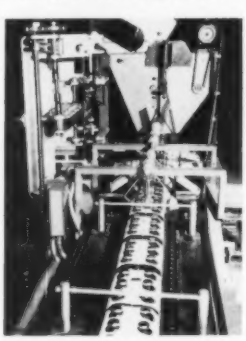
KIEFFER PAPER MILLS
BROWNSTOWN, INDIANA

156 Circle No. 320 on Card

to 12 in. square can be tested, the maker notes, adding that the drop head, guided by low-friction linear ball bearings, can be electrically released from any height up to a 32-in. maximum. There are provisions for mounting a sensing device in the center of the dropping head. The maker says it developed the unit to evaluate package cushioning material in laboratory tests prior to actual product shipment. For more information write: Gaynes Engineering Co., Dept. PE, 1644 W. Fulton St., Chicago 12, Ill., or *circle number on card.*

32—Carton And Packer

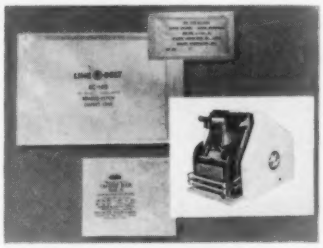
A new carton and a packaging machine for one-way bottles and cans have been introduced. The



carton, named Syncropak, is of one-piece construction with partitions (which fit between the bottles) as an integral part of its structure to provide product protection. The packaging machine, called the Syncropacker, packages either bottles or cans in the new carton. The machine has a feed hopper and requires one operator for the complete packaging process. This cartoning machine provides a single, straight-line packaging operation with the carton blanks feeding directly from the hopper over the bottles or cans. The manufacturer claims that conversion from can to bottle or bottle to can packaging takes only 15 min. For more information write: Olin Mathieson Chemical Corp., Packaging Div., Dept. PE, 460 Park Ave., New York 22, N.Y., or *circle number on card.*

33—Printing Heads

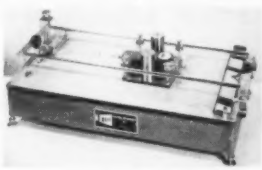
Unitized printing heads, such as the Model 70B6 for marking plastic and paper pouches and



envelopes, are designed to be included in automated packaging lines or as an integral part of packaging machines. Imprints may be of any size up to 2½x6 in. These printing units are designed for horizontal, vertical, or angular mounting and the maker asserts that speeds up to 100 cycles/min. are possible. For more information write: Markem Machine Co., Dept. PE, 150 Congress St., Keene 35, N.H., or *circle number on card.*

34—Slip, Friction Tester

A new slip and friction testing device for static or sliding tests has been developed. The de-



vice is constructed with constant-speed drive and dead-weight platen pressure. A force gauge, mounted on the moving platen, registers the maximum force for determining the static (starting) friction. Or, this force gauge converts to the continuously-indicating type so that readings can be taken over the entire surface of the material being tested and averaged out to obtain the dynamic or sliding friction. For more information write: Testing Machines,

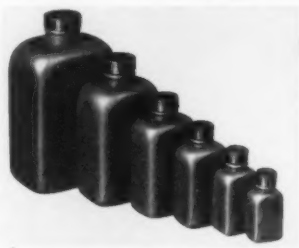
Inc., Dept. PE, 72 Jericho Turnpike, Mineola, N.Y., or *circle number on card.*

35—Bag Closing Equipment

Manufacturers and users of multiwall bags may now apply in their own plants the new, 4-ply, double-strength sewn closure ImpacTape as the result of recent equipment modification, according to the developers. The equipment has been designed for both H and E heads of Union Special Series 80600 sewing machines. The tape, which the maker states has been effective in reducing bag breakage at its most critical point—the sewing line—is a new product recently introduced. For more information write: West Virginia Pulp and Paper Co., Multiwall Bag Div., Dept. PE, 230 Park Ave., New York 17, N.Y., or *circle number on card.*

36—Polyethylene Bottles

A complete new line of rectangular bottles of linear polyethylene for packaging powders,

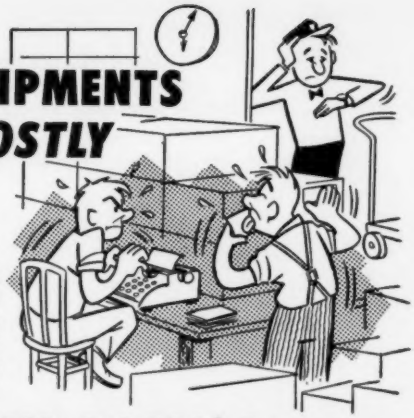


liquids, or tablets is available. These containers, called Space Saver bottles, are designed to save space on the shelf and in packaging. The bottles come in stock sizes of 1, 2, 4, 8, 16, and 32 oz. They are molded in amber or natural linear polyethylene as standard items, but are also available in colors. For more information write: Olympic Plastics Co., Inc., Dept. PE, P.O. Box 78477, Los Angeles 16, Calif., or *circle number on card.*

37—Miniature Scanner

The new SA-IR infrared photoelectric scanner, or proximity

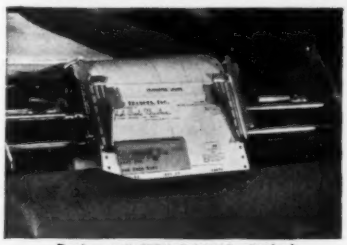
Address MULTIPLE SHIPMENTS without this COSTLY BOTTLENECK



If you regularly address 5 or more cartons per shipment

You might be shocked to find out how antiquated, repetitive methods in your shipping room are costing you money. Typing each label separately and attaching to carton is time-consuming—subject to frequent errors and mis-shipments.

The Modern STEN·C·LABL* Systems PROVIDE A TWO-WAY SAVING...



Typing unit STEN-C-LABLS attached to continuous form on tabulating machine.

Addressing direct to PANL-LABL on carton is fast and easy.

1 As a by-product of office procedure

Your present method of preparing your invoices, orders, bills of lading or shipping papers can also prepare STEN-C-LABLS *at the same time.* Whether you use manual or electric typewriters, electric billing or accounting machines, slave machines or various magnetic tape and punched IDP systems, there's a STEN-C-LABL to fit your requirements.

2 By making unlimited impressions direct to cartons, labels or tags

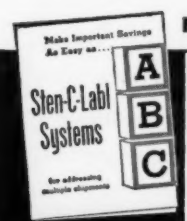
With handy squeeze-feed applicator, shipping department makes unlimited impressions direct to PANL-LABL printed on carton at no extra cost. Also addresses gummed labels and tags. Addressing is fast, neat, legible. Laborious, repetitive procedures are eliminated, preventing errors and mis-shipments.

DURABLY MARKED AND PLAINLY LEGIBLE at handling distance. A STEN-C-LABL address is sunproof and waterproof—becomes permanent part of carton. Reproduction is sharp and easy to read at handling distance.

IF YOU HAVE A MULTIPLE SHIPPING PROBLEM

(regularly addressing 5 or more cartons per shipment), you may be able to save thousands of dollars with STEN-C-LABL. Thousands of present users are making substantial savings every year with a STEN-C-LABL System tailored to their requirements.

FREE BROCHURE gives full details!



MAIL COUPON TODAY!

STEN·C·LABL, Inc.

PE-4, 1821 University Ave., St. Paul 4, Minn.

Yes, I'd like to know more about saving with STEN-C-LABLS.

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COMPANY_____

ADDRESS_____

CITY_____ STATE_____

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For longer life and less down time specify Coes Knives on your new original equipment. These knives give you clean, true cuts that mean more production, finer quality and consistent performance.

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KNIFE COMPANY
62 COES STREET
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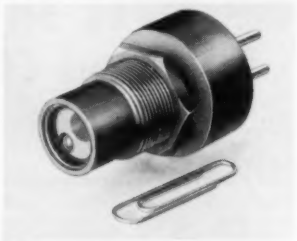
sensor, combines the energy or light source and detector in a single unit 2¼ in. long by 1⅛ in.



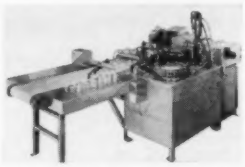
in diameter. The unit responds to metallic or non-metallic objects for counting and control operations and will sense objects or control areas at distances up to 2 in., according to the manufacturer who states also that the infrared source is rated at 60,000-hr. life and that an infrared filter minimizes effects of ambient light. For more information write: Farmer Electric Products Co., Inc., Dept. PE, 2300 Washington St., Newton Lower Falls, Mass., or *circle number on card.*

38—Automatic Case Sealer

A fully automatic case sealer, which seals both the top and bottom flaps of a case simultaneously with wide-crown staples, has been developed. This sealer is a demand-type machine which operates only when a case is loaded onto the intake conveyor. The manufacturer says the machine is adaptable to a wide range of case sizes and only a few adjustments are required for changeover. For more information write: Robertshaw-Fulton Controls Co., Fulton Sylphon Div., Dept. PE, P.O. Box 400, Knoxville 1, Tenn., or *circle number on card.*

39—Plastics Oxidizer

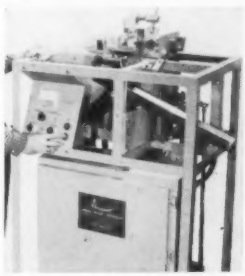
Electrically-produced oxidization is a new method for preparing plastic surfaces for printing or labeling and is done by the new Lectro-Treat machine. The equipment bombards the plastic with electrical energy, causing the surface to oxidize sufficiently to permit adhesion of inks or glues, according to the maker. The machine will



process objects of a wide variety of shapes and sizes such as bottles, vials, and novelties. The maker states the electrical treating procedure can be precisely regulated, and is clean and safe. The machine measures approximately 4x2½x6 ft. and can be incorporated into a conveyor line and adjusted to the production rate. For more information write: The Lectro-Treat Co., Dept. PE, 5020 Easton Ave., St. Louis 13, Mo., or *circle number on card.*

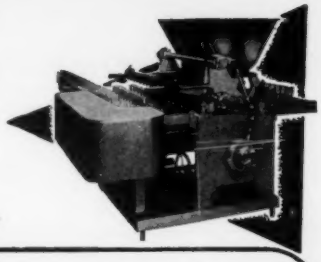
40—Weight Comparing

A new, automatic production line electronic weight-comparing system, called the Atronic



weight comparator, has been announced. When used in a processing or production operation, the unit handles a continuously moving stream of parts or materials, weighs each item individually, automatically compares this weight to within ± 1 gm. of a predetermined proper weight, and either accepts or rejects the item, the manufacturer states. As presently designed, the system handles items weighing up to 5 lb. For more information write: Atronic Products Inc., Dept. PE, One Bala Ave., Bala-Cynwyd, Pa., or *circle number on card.* *(End)*

Fill all types of
LIQUIDS
SEMI-LIQUIDS
and
SEMI-SOLIDS
with
GEYER



FILLING MACHINES
and get many outstanding benefits

You can fill foods, dairy products, cosmetics, drugs, lubricants and chemicals with GEYER filling machines and get these outstanding benefits: greater accuracy of fill, faster changeover from one size container to another, the handling of any type container, ease of cleaning and long, trouble-free life. Leaders in many different industries using GEYER equipment get these benefits every day.

To make sure your containers are free from foreign matter when filled, use the GEYER ROLL-OVER CLEANER. It removes glass pieces, dust and dirt from containers by inverting them 180 degrees and cleaning by air blast. This roll-over method is safety insurance for any packer because it assures positive cleaning. Speeds are from 40 to 200 containers per minute.

GEYER equipment is available in any size to meet your need. Write or call for details.

THE FILLER MACHINE CO.
the original builder of Philadelphia piston fillers
10 PENN AVE., ROCKLEDGE, PHILA. 11, PA.
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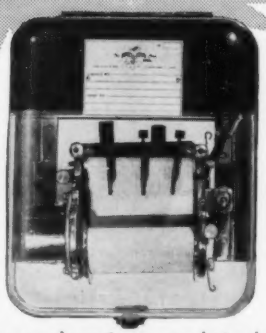
Circle No. 323 on Card

HOW MUCH DOES
SHOCK
COST?



The only sure answer to this is the one based on information from an Impact-O-Graph that has been "riding" with your product from the moment it is packaged until it reaches its destination. All of the shocks and impacts enroute will be recorded for visual study that will enable your company to tailor packaging and shipping methods to avoid all but unusual damage. Without such research, packaging becomes costly guesswork, as no one can properly engineer a product unless he knows the service conditions to which it will be subjected.

This is just one of the many applications for this small, inexpensive yet extremely accurate instrument, Impact-O-Graph, which is a three-directional mechanical accelerometer developed for measuring shock and impact on any moving object.

Write today for our new brochure describing Impact-O-Graph and its many uses.

NSTC approved. Leasing arrangements are available.

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R. P. KEITH BUILDING • CLEVELAND 15, OHIO • Cherry 1-8838

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PLASTIC
CONTAINERS

Exceptional printing
makes the difference...
Helps make the sale!

PACKAGE DRUG SUNDRIES • VITAMINS, BOUILLON CUBES, CAKE SPRINKLES, ETC.

- Printed or decorated up to 4 colors on crystal clear, transparent or opaque colors
- Also available unprinted
- Largest line of RIGID plastic containers
- 1/5 the weight of glass—greatly reducing ever-increasing shipping and handling costs
- Lightweight and shatterproof—with rigid wall protection
- Economical—with customer re-use value

*T. M.

Write for full-color catalog, samples and prices.

LERMER PLASTICS, INC.
540 South Avenue
Garwood, New Jersey
PIONEERS AND SPECIALISTS IN PLASTIC CONTAINERS SINCE 1919

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Planned Packaging moves merchandise

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Packaging Corporation of America now introduces a new paperboard consisting of a homogeneous blend of virgin pulpwoods. Through advanced new techniques this revolutionary new product offers substantial economies and meets a wide range of packaging requirements.

New *North-Brite Blended* Paperboard is proving itself outstandingly as a more economical medium for packaging many products where quality characteristics, appearance and assured purity of raw material are essential.

Development of specialized processes for production of efficient, lower cost paperboards is but one of the countless ways in which Packaging Corporation's concept of Planned Packaging produces better packaging... more sales. Whether your requirements are large or small, regional or national, we welcome the opportunity to help you.

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For your convenience, we have also included addresses of suppliers so that you may write directly for more information.

101—Pressure-Sensitive Tapes

A folder describing the variety of applications for pressure-sensitive paper tapes and their physical properties has been released. The folder, with 25 photographs, shows how Scotch brand paper tapes are used for sealing, holding, identifying, and other packaging projects. Also described are machines designed to dispense and apply this tape. For a copy of the folder write: Minnesota Mining & Mfg. Co., Dept. PE, 900 Bush Ave., St. Paul 6, Minn., or *circle number on card.*

102—Soft-Drink Bottles

Average costs of filling soft drinks in One-Way glass bottles compared with returnable bottles or cans are outlined in a report. The report, titled "What's The Real Cost?" presents average costs including such items as the beverage, package, filling, overhead, warehousing, selling, and delivery. For more details write: Owens-Illinois, Dept. PE, Box 1035-36, Toledo 1, Ohio, or *circle number on card.*

103—Bench Scales

Type 9600 scales are heavy-duty, platform-type bench scales for general-purpose industrial weighing. Bulletin 3415 specifies the four capacities available, illustrates construction and dimensions, and points out operational features. For further information write: The Exact Weight Scale Co., Dept. PE, 912 W. Fifth Ave., Columbus 8, Ohio, or *circle number on card.*

104—Polyethylene Resins

Bulletin A-2163 lists 13 different grades of polyethylene resins engineered for specific packaging applications. Included is a comparison chart showing melt index, density, molecular weight distribution, properties, and applications for each type of resin. For additional information write: E. I. du Pont de Nemours & Co. (Inc.), Dept. PE, Film Dept., Wilmington 98, Del., or *circle number on card.*

105—Plastic Containers

Brochure 958 discusses the advantages and various applications for rigid plastic containers—clear or opaque. Stock sizes and capacities are listed for threaded containers with metal and plastic screw caps, shell containers with polyethylene plug closures, shoulder containers with slip-on closures, and beaded types with snap-caps or plug closures. For a copy write: Lermer Plastics, Inc., Dept. PE, 540 South Ave., Garwood, N.J., or *circle number on card.*

106—Packaging Articles

To show installations of Bartelt flexible packaging and cartoning machinery, "19 Rugged Individuals At Work" has been issued. This 40-page illustrated booklet contains a collection of reprinted articles telling of applications for its packaging machinery. For a copy of the booklet write: Bartelt Engineering Co., Inc., Dept. PE, 1900 Harrison Ave., Rockford, Ill., or *circle number on card.*

107—Filling, Labeling Machines

Specification sheets are offered on overhead-drive vacuum and gravity fillers. Literature is also available on MRM continuous-motion, fully automatic labeling machines which feature speeds from 40 to 150 labels/min. and handle a wide range of label sizes. For more information write: MRM Co., Inc., Dept. PE, 191 Berry St., Brooklyn 11, N.Y., or *circle number on card.*

108—Bag Filling Machine

Recently issued was an 8-page brochure on the Kraftpacker, an automatic, open-mouth bag filling machine. It claims the machine will bag 400 to 500 tons of free-flowing materials in an 8-hr. day, with an accuracy of ± 4 oz./100 lb. To receive this brochure write: Kraft Bag Corp., Gilman Paper Co. Subsidiary, Dept. PE, 630 Fifth Ave., New York 20, N.Y., or *circle number on card.*

109—Die-Cutting Press

Information is available on a new die-cutting press for trimming finished packages formed by skin- or blister-packaging in plastic. Two models of the equipment are available featuring different die space. For more details write: Comet Industries, Dept. PE, 9805 Franklin Ave., Franklin Park, Ill., or *circle number on card.*

110—Case Packers

Bulletin CP-702 contains six pages of information on the Atkron Dumore continuous-motion case packers. These units (four models) automatically pack bottles, cans, or jars in return cases or shipping cases. They also case can or bottle wrap-around packs in shipping trays or flapped cases. For a copy of the bulletin write: Atkron, Inc., Dept. PE, P. O. Box 311, Cuyahoga Falls, Ohio, or *circle number on card.*

111—Cellophane Multi-Packs

A 16-page booklet serves as a guide on multiple packaging with flexible, transparent materials. Multi-pack applications are suggested for food, confectionery, tobacco, apparel, and other items. For a copy of this booklet write: American Viscose Corp., Film Div., Dept. PE, 1617 Pennsylvania Blvd., Philadelphia 3, Pa., or *circle number on card.*

112—Polyethylene Resin Uses

A 4-page data sheet lists Petrothene polyethylene resins, their main characteristics, and their general applications. Several of the available compounded resins are listed too. Designated PRTD-1, this data sheet is meant to serve as a general guide. For copies of this publication write: U. S. Industrial Chemicals Co., Dept. PE, 99 Park Ave., New York 16, N.Y., or *circle number on card.*

113—Carton Filler, Sealer

New literature is available on the Triangle automatic carton filler and sealer. Operational features are illus-

trated and described. Speed and size of carton ranges are also given. To receive this brochure write: Triangle Package Machinery Co., Dept. PE, 6631 W. Diversey Ave., Chicago 35, Ill., or *circle number on card.*

114—Tablet Unit Packager

A new catalog sheet describing the Model UPH unit packager for tablets is available. Designed for round, rectangular, or square pocket packages, the machine features multiple cut-off for strip packaging, adjustable speed, and a slitter-perforator between rows. The catalog sheet gives general specifications. For a copy write: Wrap-Ade Machine Co., Inc., Dept. PE, 188 Sargeant Ave., Clifton, N.J., or *circle number on card.*

115—Packaging Abstracts

PACKAGE ENGINEERING magazine is offering a data sheet describing *Packaging Abstracts*, a monthly publication which abstracts articles about packaging from some 200 magazines from all over the world. Each issue is divided into 18 sections of topics pertaining to raw materials, adhesives, coating treatments, shipping containers, etc. For more information write: Package Engineering, Dept. PE, 185 N. Wabash, Chicago 1, Ill., or *circle number on card.*

116—Flexible Package Machinery

Describing its line of filling and sealing machines which handle flexible packaging materials, a 6-page illustrated brochure is being offered. Automatic units include a form-fill-seal machine, a strip packager, drum liner, pouch maker-sealer, saddle label sealer, as well as foot-operated and hand-operated sealing machines. For further information write: Mercury Heat Sealing Equipment Co., Dept. PE, 2601 N. Howard St., Philadelphia 33, Pa., or *circle number on card.*

117—Tablet Counter

An information sheet describes the No. 48 tablet counter. This machine counts and fills from 45 to 100 bottles of 100's/min. Adjustable for tablet thickness, unit is furnished on portable table and uses floor space measuring 27 x 42 in. For this information write: The Lakso Co., Dept. PE, 47 Ashby State Rd., Fitchburg, Mass., or *circle number on card.*

118—Peelable Protective Casing

Offered is an illustrated leaflet giving technical data on Prox Peel, a protective plastic packaging material. The object is packaged by spraying, submerging, or flowing on a film of plastic which loosely adheres to the packaged product and is peeled off at the point of use. Either opaque or transparent types are available and the film provides protection against moisture, heat, or brine. For this data write: Pyroxylin Products, Inc., Dept. PE, 4815 S. St. Louis Ave., Chicago 32, Ill., or *circle number on card.*

119—Weight Fact Kit

Offered is a weight fact kit that is designed to help avoid weighing errors, production bottlenecks, and materials handling inefficiencies. The kit also serves as an aid in checking the accuracy of scales. For a copy of the kit write: Toledo Scale, Div. of Toledo Scale Corp., Dept. PE, Toledo 12, Ohio, or *circle number on card.*

120—Counter/Coder

Two pieces of literature describe the Tickometer, a machine designed to automatically count, date, code, and imprint labels, tags, cartons, etc. at speeds from 500 to 1,000 pieces/min. For more information write: Pitney-Bowes, Inc., Dept. PE, 7737 Walnut St., Stamford, Conn., or *circle number on card.*

121—Liquid Fillers

Bulletin No. 955F provides specifications and operating details for

PACKAGE MAKES THE DIFFERENCE

Quick-Change Artist: TRANSWRAP MACHINE

Want an automatic bag forming, filling and sealing machine that can double in brass as a quick-change artist while it gives you fast, efficient, economical performance day after day? Then check the Package Transwrap S-750. Because this new unit not only forms bags 3″ to 15″ long and 2″ to 8½″ wide, but also handles all the newest flexible heat-sealing materials and can change from one to the other in a jiffy.

The Transwrap S-750's unique unit assembly makes it possible to completely change bag sizes in less than 15 minutes, while new plug-in end seals cut change-over time on films to 20 minutes. Add to this—convenient handwheel regulation of bag speeds from 25 to 75 a minute from a single tube, dust and rust-proof construction to cut cleaning and maintenance time, and sealed ball and roller bearings in the central drive that require no lubrication—and you see why the new Transwrap offers you more for your packaging dollar.

Your Package representative can give you full details, tell you about the scale mounts and feeds available, and show you how the Transwrap S-750 can help improve your packaging profit picture.

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PACKAGING IS PART OF YOUR PROFIT PICTURE

Exclusive from Johns-Manville!

J-M Dutch Brand No. 400 Strapping Tape has vinyl backing for abrasion resistance. It's reinforced with glass filaments (60 e.p.i.) and resists fresh and salt water, acids, alkalies, grease, oil, fungi and corrosives.

Now you can get all the advantages offered by filament-reinforced strapping tapes... *without fear of abrasive damage!* Just use Johns-Manville Dutch Brand No. 400 Strapping Tape.

You see, most strapping tapes fail under severe abrasion because the backing wears away quickly, thus exposing the filaments to life-robbing abrasion. But not J-M Dutch Brand No. 400! It has an *exclusive* vinyl backing that's known for outstanding durability.

What's more, this abrasion-resistant strapping tape costs no more than ordinary, short-lived, paper-backed strapping tapes . . . costs less than acetate-backed strapping tapes.

Like all J-M Dutch Brand Strapping Tapes, No. 400 has a pressure-sensitive adhesive that grabs instantly . . . holds tenaciously under a wide range of conditions. It has an average tensile strength of 275 p.i.w. and fully meets U. S. Govt. Spec. PPP-T-97c, Type II.

For full facts on J-M Dutch Brand® Strapping Tapes, ask your J-M Distributor for Data File DF-ST. Or write Johns-Manville, Box 14, New York 16, N. Y. In Canada: Port Credit, Ont. Cable: Johnmanvil.

OTHER J-M STRAPPING TAPES . . .

No. 401 Strapping Tape.
Acetate-backed . . . reinforced with rayon filaments (100 e.p.i.) for high impact strength and consistent holding power. Tensile strength averages 225 p.i.w.; fully meets U. S. Govt. Spec. PPP-T-97c, Type I.

No. 402 Strapping Tape.
Acetate-backed...reinforced with glass filaments (60 e.p.i.) for heavy-duty packaging, bundling and palletizing. Tensile strength averages 325 p.i.w.; fully meets U. S. Govt. Spec. PPP-T-97c, Type II.

JOHNS-MANVILLE . . . AND JOHNS-MANVILLE ALONE . . . MAKES EVERY MAJOR TYPE OF INDUSTRIAL AND ELECTRICAL TAPE!

JM PRODUCTS JOHNS-MANVILLE

12 different models of precision filling machines. These are volumetric liquid fillers handling vials, bottles, ampuls, etc. The machines dispense aerosols, biologicals, colognes, lotions, perfumes, sprays, vitamins, and other such items. For this bulletin write: Popper & Sons, Inc., Dept. PE, 300 Fourth Ave., New York 10, N.Y., or *circle number on card.*

122—Coated Kraft Papers

Samples of polyethylene-coated kraft papers are presented in a file portfolio kit which also contains the story on these protective grades. Those included are coated, laminated, creped, special-treated, pouch papers, foil combinations, and trademarked grades using clear, opaque, or colored polyethylene. For further information write: Thilmany Pulp & Paper Co., Dept. PE, Kaukauna, Wis., or *circle number on card.*

123—Bagging, Cartoning Machines

These manufacturers of a variety of machines for weighing, filling, and sealing bags of cellophane, glassine, etc., as well as cartoning and weighing equipment for the food, bakery, candy, and pharmaceutical fields offer a 32-page booklet. Descriptions and illustrations show the line of packaging machinery. For a copy of this booklet write: Wright Machinery Co., Div. of Sperry Rand Corp., Dept. PE, Calvin & Holloway Sts., Durham, N.C., or *circle number on card.*

124—Band Heat Sealer

An illustrated brochure describes three models of the Rotor-Sealer. Used in heat sealing thermoplastic materials, the band-type sealer features forced water cooling. For more information write: Ralph Chaffee & Co., Dept. PE, 2358-60 Market St., San Francisco 14, Calif., or *circle number on card.*

125—Bottle Cleaners

A folder presents a flow diagram, specifications, and descriptions of the Model 10 Hydro-Jet bottle cleaners. Various sizes are illustrated and units handle 16-oz. bottles or smaller. For more information write: Barry-Wehmiller Machinery Co., Dept. PE, 4660 W. Florissant Ave., St. Louis 15, Mo., or *circle number on card.*

126—Closing Methods

A condensed report on a time and motion study is available. Study compares relative efficiency of four different methods of closing corrugated containers: reinforced tape, gummed tape, hand stapling, and gluing. For more information write: Atlantic Gummed Paper Corp., Dept. PE, 1 Main St., Brooklyn 1, N.Y., or *circle number on card.*

127—Liquid Fillers

Brochure VF-1 GL illustrates and describes sanitary, liquid, rotary vacuum fillers for many styles of containers up to 4-oz. capacities. Variable-speed drive and leveling screws allow integration into most packaging lines. For this brochure write: The Lodge & Shipley Co., Climax Products Div., Dept. PE, 3055 Colerain Ave., Cincinnati 25, Ohio, or *circle number on card.*

128—Can Packer

A bulletin describes and gives specifications for the CKSK can packer. Mechanical drawings and features are given of this machine which has a production rate of 25 cases/min. and handles case sizes from 202-610 diameter and 208-600 (double tier) and 900 maximum (single tier) in height. For a copy write: Crompton & Knowles Packaging Corp., Dept. PE, 100 Berkshire St., Holyoke, Mass., or *circle number on card.*

129—Hot-Melt Adhesives

Offered is a 16-page booklet describing Thermogrip hot-melt ad-

Heap Good!

You bet. Many chiefs and warriors plenty happy . . . use-um FINDLEY glues. All kinds. For all jobs. Heap good! Stick-um like pitch. Fast as lightning. Strong. Hold like bear. Help save-um plenty wampum. You get-um sample FINDLEYS now. Make you top man on totem pole.

Findley's INDUSTRIAL ADHESIVES exclusively

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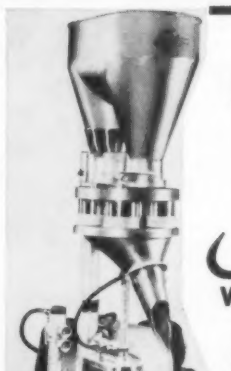

FILLING POPCORN, BEANS, RICE, SOAP . . .

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Model THR Twin Hopper Volumetric Filler.

- FILLS FASTER from 1 or both cups
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FILLS: 1-5 LBS. of Rice, Beans, Nuts, Detergents, Soap Powders, etc. ¾-4 OZ. of Popped Corn, Puffed Cereals, etc.

COMPACT: 23" wide, 32" high, 50" deep, with ¼ HP Motor.

Designed to match average range of product weights, packing facilities and operator skills.

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hesives (supplied in rope-like form on coils) and a variety of applicators. For more information write: United Shoe Machinery Corp., Dept. PE, 140 Federal St., Boston 7, Mass., or *circle number on card.*

130—Cartoning Equipment

Portable automatic cartoning equipment is described in an illustrated brochure. Details on adaptations and accessories, as well as special combinations, are explained. For more information write: Bivans Corp., Dept. PE, 2431 Dallas St., Los Angeles 31, Calif., or *circle number on card.*

131—Coated Papers

Information and samples of Polycel and polyethylene-coated papers are available. Brochure discusses automatic packaging with coated papers. For more information write: H. P. Smith Paper Co., Dept. PE, 5011 W. 66th St., Chicago 38, Ill., or *circle number on card.*

132—Case Former

Data sheets are available on the Caral case former, a machine for setting up shipping containers. Adaptable to most standard case packers, it requires 64 sq. ft. of floor space, and operates at 20 cases/min. For more information write: Caral Packaging Machinery, Inc., Dept. PE, 579 Cleveland Ave., Albany, Calif., or *circle number on card.*

133—Seamless Cans

In product memo No. 111, light and unbreakable metal cans of seamless, one-piece construction are illustrated and described. Charts show capacities, dimensions, packing/carton, and shipping weights for each type of can. For further information write: Ellisco, Inc., Dept. PE, American & Luzerne Sts., Philadelphia 40, Pa., or *circle number on card.*

134—Versatile Wrapper

A bulletin describes the Model No. 6 universal wrapping machine. Featuring a self-measuring paper feed which cuts off the correct amount of wrapping material for each item, this machine can produce up to 40 packages/min. This machine wraps goods on flat cards, trays, or in cartons within the range of 4 to 16 in. long, 2 to 9½ in. wide, and ⅜ to 5¼ in. high. For more data write: Package Machinery Co., Dept. PE, W. Chestnut St., East Longmeadow, Mass., or *circle number on card.*

135—Plastic Tubes

Available is a technical service bulletin on polyvinyl chloride and linear polyethylene tubes. It gives information on the advantages of

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these tubes, services offered by the company, colors, caps and fitments, printing, coatings, and shipping. A specification sheet on the various tubes is included. For further information write: Thatcher Glass Mfg. Co., Inc., Plastic Container Div., Dept. PE, P.O. Box 363, Nashua, N.H., or *circle number on card.*

136—Automatic Capping

Eight different models of automatic bottle-capping equipment are illustrated and described in a 6-page pamphlet. General specifications and a list of users are included. For more information write: Consolidated Packaging Machinery Corp., Dept. PE, 1400 West Ave., Buffalo 13, N.Y., or *circle number on card.*

137—Collapsible Tube Reference

Available is a reference booklet for selecting and specifying collapsible tubes, plastic closures, and custom-molded tips and caps. For more information write: Wheeling Stamping Co., Dept. PE, Wheeling, W. Va., or *circle number on card.*

138—Aerosol Test Tank

Bulletin LTT-1 contains information on an optional safety hood for an aerosol heat and leak test tank. The stainless steel inspection hood is fitted with shatterproof, safety-glass sliding doors. For more information write: Island Equipment Corp., Dept. PE, P. O. Box 38-276, Miami 38, Fla., or *circle number on card.*

139—Packaging Machinery

Technical Bulletin P-806 describes a variety of packaging machinery. Pictures and specifications for this equipment are given, including data on pillow and fin-seal package making and filling machines; a filler for granules, powders, or pastes; a carton maker-liner-filler; a carton filling and sealing machine; and a Stretchrap packaging machine which contour-wraps irregularly shaped products in Pliofilm. To obtain this bulletin write: FMC Packaging Machinery Div., Food Machinery & Chemical Corp., Stokes & Smith Plant, Dept. PE, 4994 Summerdale Ave., Philadelphia 24, Pa., or *circle number on card.*

140—Cushoning Pads

A 4-page illustrated folder describes the shock absorbing qualities of Hardi-Pads. The pads are made of polyurethane foam reinforced with a rubber tube to prevent settling. For more information write: Hardigg Industries, Dept. PE, South Hadley Falls, Mass., or *circle number on card.*

141—Polypropylene

An illustrated folder outlining the uses and physical properties of Escon polypropylene is offered. For more information write: Enjay Co., Inc., Dept. PE, 15 W. 51st St., New York 19, N.Y., or *circle number on card.*

142—Gallon-A-Stroke Filler

Model G-59, a two-line, piston-type filling machine is discussed in a bulletin. At a gallon a stroke, it fills from 20 to 40 gal./min. with

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liquid, semiliquid, and semisolid products. It operates by the bottom-up method and features a "no jar, no fill" device. For further information write: The Filler Machine Co., Inc., Dept. PE, 10 Penn Ave., Rockledge, Philadelphia 11, Pa., or *circle number on card.*

143—Tucking Machine

A 4-page folder provides information on a bag tucking machine, the Tommy Tucker. Made to perform on any granular or powdered material (such as coffee, sugar, flour, pet foods, chemicals), it operates between filler and bag closer for a completely automatic line. Specifications are given, and a series of sequence photographs show the machine in operation. For details write: George H. Fry Co., Dept. PE, 42 E. Second St., Mineola, N.Y., or *circle number on card.*

144—Weight Imprinter

Descriptive material is being offered on the Weight Brander, a completely automatic means of weighing cartons or containers and stamping the weight directly thereon. The 2-page brochure illustrates the versatile applications of this unit and points out that it will imprint the weight on any side of the container at high production speeds. For further information write: Wilson Automation Co., Dept. PE, P.O. Box 3855, Detroit 5, Mich., or *circle number on card.*

145—Winding Principles

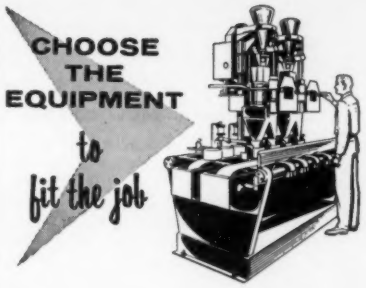
A handbook, "Principles and Practices of Modern Winding," is available. Center-shaft winding of plastics, paper, etc. is discussed and winding machines and accessories are described. For more information write: Hobbs Mfg. Co., Dept. PE, 38D Salisbury St., Worcester 5, Mass., or *circle number on card.*

146—Suction Labeler

Offered is a brochure on the Pony 300 which labels containers at speeds up to 300/min. The unit uses suction to handle labels and an electronic index detects label supply interruptions. In addition, shockless bottle feeding in New Jersey's non-stop rotary operation is described. For further information write: New Jersey Machine Corp., Dept. PE, 1600 Willow Ave., Hoboken, N.J., or *circle number on card.*

147—Molded Pulp Interiors

A 4-page pamphlet lists advantages of molded pulp shapes for interior packaging. Custom molded, the contoured partitions protect against shock and are particularly adapted to low-cost packaging of fragile



See GUMP equipment at the Packaging Show. Range and versatility of the GUMP line provide the most efficient unit for packaging many dry products. Several types of net weighers, for accurate weighing of fine powders to products of relatively large particle size. Automatic bag, can or carton handling equipment.

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National Packaging Exposition

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items, the maker says. For more information write: Keyes Fibre Co., Dept. PE, Waterville, Me., or *circle number on card.*

148—Electronic Counters, Controls

Bulletin B describes a line of electronic counters, controls, photo heads, and accessories. Illustrations are included. For more information write: Post Machinery Co., Dept. PE, 140 Elliott St., Beverly, Mass., or *circle number on card.*

149—Piston Filler

Literature is being offered on the Votator piston filler. Claiming higher speed and accuracy with reduced spillage, the filler is available with from 6 to 36 stations. For further information write: Girdler Process Equipment Div., Chemetron Corp., Dept. PE, 2820 W. Broadway, Louisville, Ky., or *circle number on card.*

150—Polyethylene Swatches

A folder contains samples and other information on Kordite polyethylene film. A chart shows the complete range of stock sizes, and applications for black and clear film are outlined. To obtain this swatch book write: The Kordite Co., Div. National Distillers & Chemical Corp., Dept. PE, Macedon, N.Y., or *circle number on card.*

151—Granular Net Weighers

Available is a series of brochures on net weighers for granular materials. Specifications and descriptions of models which have a range from ¼ oz. to 5 lb. are included. For copies of this literature write: B.F. Gump Co., Dept. PE, 1345 S. Cicero Ave., Chicago 50, Ill., or *circle number on card.*

152—Case Imprinter

Data sheet No. 100-59 contains information on the Packomatic case imprinter which prints brand names, case contents, deal or lot numbers, or other identification on shipping cases automatically as part of in-line production. It will print on any or all four case sides and end panels. For additional information write: J. L. Ferguson Co., Dept. PE, Box 1226, Joliet 1, Ill., or *circle number on card.*

153—Polystyrene Data

A product data guide on its three lines of Elrex polystyrene resins has been published. The 4-page brochure gives significant property ranges in tabular form. The brochure also presents an explanation of the Elrex nomenclature system. For a copy write: Rexall Chemical Co., Dept. PE, P.O. Box 37, Paramus, N.J., or *circle number on card.*

154—Winding Spools

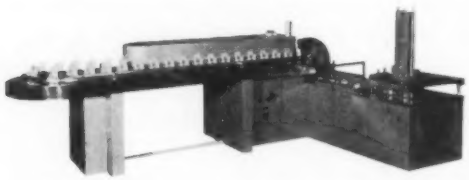
A 4-page brochure illustrates rotary, crimp, loose-end, and metal-reinforced spools. Applications include winding of printed ribbons and strings, extruded plastics, tapes, wire, and similar items. Specifications for each of the many types of winding spools are given. For a copy write: R. C. Can Co., Dept. PE, 9430 Page Ave., St. Louis 14, Mo., or *circle number on card.*

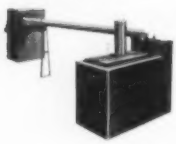
155—Vacuum Forming Machine

A data sheet is available on the PM Model V vacuum forming machine for drape, skin, and blister packaging applications. Features of this automatic machine are pointed out and general specifications are given. For more information write: Pacific Plastic Machinery Inc., Dept. PE, 3443 S. Lawndale, Chicago 23, Ill., or *circle number on card.*

156—Multiwall Closure

Bulletin No. 351 provides a description of the advantages of Impac-Tape for closing multiwall bags. This new type of sewn closure adds four layers of kraft tape to the sewing line instead of the conventional two. Results of drop tests and specifications are included. For additional details write: West Virginia Pulp and Paper Co., Multiwall Bag





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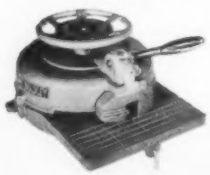

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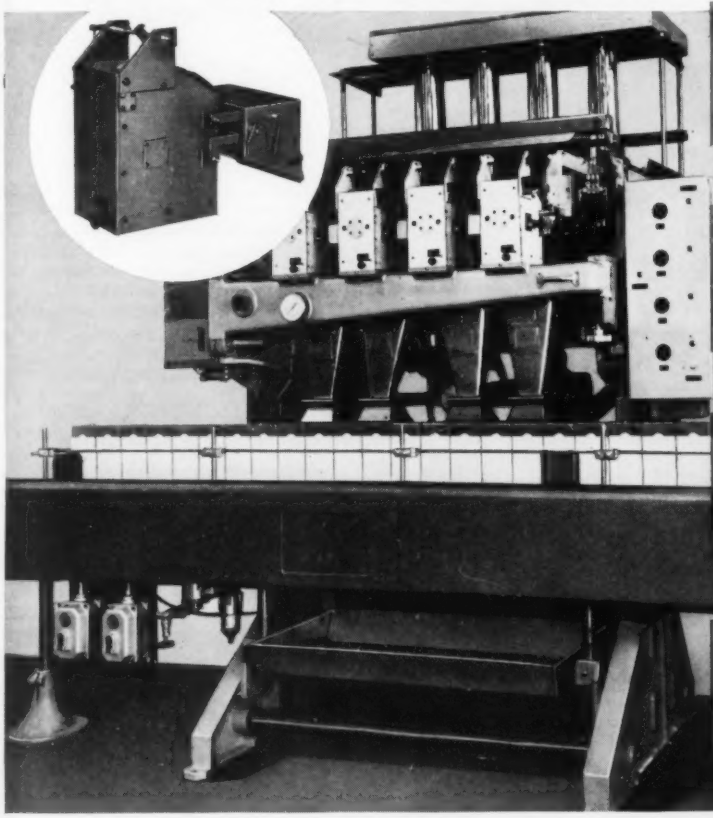

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Extremely responsive to changes in product density and feeding rate

Weighing assembly travels only minute distance - .020"

Practical approach to instantaneous pressure weighing

Sensitive, yet durable, continual operation without change in accuracy

No weighing method ever devised offers the combination of speed, accuracy and dependability that is inherent in the revolutionary PNEUMATRON design. It establishes new standards of precision in net weighing. Available in two, four and six head models. Each head consists of a sensitive cantilever assembly and air control device for accurately detecting the deflected position of its receptacle as goods are filled.

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PNEUMATIC

Packaging and Bottling Equipment

Div., Dept. PE, 230 Park Ave., New York 17, N.Y., or *circle number on card.*

157—Compression Testers

Offered is a 4-page brochure entitled "Three Ways to Lose Money." The brochure describes the TMI line of universal compression testing equipment. Drawings show 12 different types of strains that a product might be subjected to and how testing equipment can duplicate and measure the stress. To obtain this literature write: Testing Machines, Inc., Dept. PE, 72 Jericho Turnpike, Mineola, N.Y., or *circle number on card.*

158—Vacuum Fillers

A 20-page booklet illustrates and describes U.S. rotary, vacuum filler models. Automatic operating features are pointed out, and container handling attachments, filling tube assemblies, feed or discharge conveyors, and general specifications are described. For a copy write: U.S. Bottlers Machinery Co., Dept. PE, 4009 N. Rockwell St., Chicago 18, Ill., or *circle number on card.*

159—Photoelectric Equipment

A product data sheet is offered giving operational features, applications, and other general information on electric eye equipment. Those included are the photoelectric LR1 receiver and the light projector LP1. For further details write: Electric Eye Enterprises, Dept. PE, 1935 N.W. 191st St., Opa-Locka, Fla., or *circle number on card.*

160—Polyethylene Coating

A catalog bulletin provides technical data and general information on Poly-Eth 1018, recently added to Spencer's line of coating resins. It is formulated to perform at low coating weights and high production speeds. To receive this data write: Spencer Chemical Co., Dept. PE, Dwight Bldg., Kansas City 5, Mo., or *circle number on card.*

161—Polystyrene Film

A new 4-page folder, entitled "Clear Visolyte Film," is available. Described are the features of this biaxially-oriented polystyrene film. Film characteristics are explained and applications in packaging and overwrapping are suggested. For a copy of the folder write: Visking Co., Div. Union Carbide Corp., Dept. PE, 6733 W. 65th St., Chicago 38, Ill., or *circle number on card.*

162—Frozen Bar Packaging

Explained in a 14-page pamphlet is the manufacture, packaging, and marketing of colored and flavored water in frozen bars. The literature is entitled "The Packaging of Colored, Flavored Water for Frozen Bars" and discusses in detail subjects such as shipping, storage, flexible packaging materials, and machinery. For a copy of the pamphlet write: Continental Can Co., Inc., Dept. PE, 100 E. 42nd St., New York 17, N.Y., or *circle number on card.*

163—Corrugated Box Maker

A revised catalog on the Rite-Size corrugated box maker and auxiliary equipment has been prepared. It includes complete information on operation, applications, box size ranges, improved production rates, and advantages of the machinery. For a copy of this catalog write: Colt Packaging Machinery Co., Dept. PE, 53 Washington Ave., Cranston 7, R. I., or *circle number on card.*

164—Bagging Machines

A new, illustrated 4-page brochure describes eight new bagging machines which were developed for packaging textile and yarn products. These semiautomatic bag opening and filling machines handle polyethylene, cellophane, kraft, and other bag materials. For additional information write: Tele-Sonic Pack-

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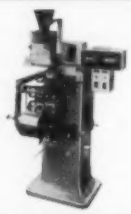
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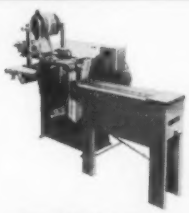
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aging Corp., Dept. PE, 208 W. 27th St., New York 1, N.Y., or *circle number on card.*

165—Plastic Coated Papers

A new file folder contains a variety of Marvelene plastic-coated packaging materials. Included are samples of pouch paper, blotter paper, metallic, and a number of krafts—all coated with polyethylene. A detailed application list is given. For this folder write: The Marvellum Co., Dept. PE, Holyoke, Mass., or *circle number on card.*

166—Portable Marker

A bulletin is available to describe the Avery A-58 price marking machine. This portable marking machine is capable of imprinting as many as 150 pressure-sensitive labels per minute. To obtain a copy of this catalog sheet write: Avery Label Co., Div. 179, Dept. PE, 1616 S. California St., Monrovia, Calif., or *circle number on card.*

167—Plastic Liners

A manufacturer of plastic liners, plastic bags, machinery covers, and custom specialties has issued a new 20-page manual, "Facts and Figures." This technical booklet depicts the uses of protective liners for drums, cans, pails, and cartons. A chart of properties and values of flexible films for packaging is included. For a copy of this manual write: Protective Lining Corp., Dept. PE, 22 Woodhull St., Brooklyn 31, N.Y., or *circle number on card.*

168—Corrugated Boxes

"How To Pack It In H&D Corrugated Boxes" is a 32-page catalog of ideas on basic styles and designs for corrugated containers. Each type of container is illustrated and its general merits and applications noted. For this booklet write: Hinde & Dauch Div., West Virginia Pulp & Paper, Dept. PE, P.O. Box 861, Sandusky, Ohio, or *circle number on card.*

169—Polypropylene Film

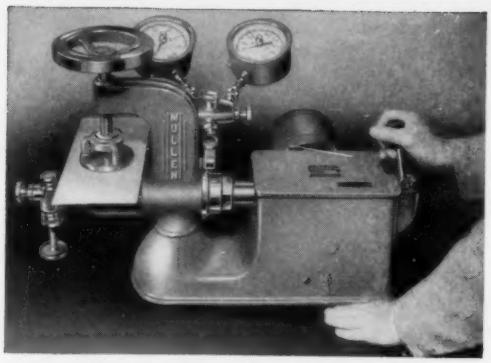
A brochure on the characteristics and applications of Olefane polypropylene packaging film has been issued. The brochure contains two printed inserts of the film. A general list of properties is given and charts and diagrams provide technical data. For further information write: AviSun Corp., Dept. PE, 345 Post Rd., Marcus Hook, Pa., or *circle number on card.*

170—Plastic Vials

Descriptive literature is available on a line of plastic cylindrical vials

THE MULLEN TESTER

World's Standard Burst Tester for



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Cut cellophane costs, by Richard Kaffenberger

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Select the right package for a sticky product, by William G. Louden

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We recently were appointed American agents for Packaging Abstracts, published by the British research association PATRA—The Printing, Packaging & Allied Trades Research Association. This service gives you in a single, handy periodical (5½x8½ in., averaging 75 pages a month, plus the annual index), brief summaries of packaging articles that have appeared in some 200 packaging magazines plus over 150 magazines devoted to printing and allied subjects, and numerous patents, books, pamphlets, and technical data provided by makers of machinery and materials. An average issue carries about 400 abstracts based on literature received from all parts of the world.

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complete with plastic closures. Called Handy-Paks, they were designed for packaging small parts in limited quantities or for sampling. There are ten different sizes ranging from ⅜ to 3 in. For additional information write: Celluplastic Corp., Dept. PE, Federal Trust Bldg., 24 Commerce St., Newark 2, N.J., or *circle number on card.*

171—Interlocking Partitions

A 4-page folder has been published to describe the various types and applications for APIP interlocking partitions for interior packaging. Features and advantages are pointed out and paperboard specifications and characteristics are listed. To obtain a copy write: American Partition Co., A Div. of Standard Brands Inc., Dept. PE, 3043 N. 30th St., Milwaukee 10, Wis., or *circle number on card.*

172—Heat-Seal Emulsion

Bulletin No. 535-A is being offered as a report on Polybond BK-37, a heat-seal emulsion. It may be used on a variety of papers from rough to smooth, including waxed paper. Discussed are coloring, general properties, storage, spread, drying, etc. For this bulletin write: Polymer Industries, Inc., Dept. PE, Springdale, Conn., or *circle number on card.*

173—Polyurethane Foam

A 4-page file has been prepared to present the manufacturing, research, and other facilities available for the fabrication of polyurethane foam. One page defines types and specifications of standard types and special formulations. For additional information write: Midwest Foam Products Co., Dept. PE, 1632 Chicago Ave., Evanston, Ill., or *circle number on card.*

174—Elevator Hopper

Brochure B-34 outlines the features of an automatic elevator hopper. The unit feeds, orients, and counts such items as small cartons, plastic parts, bottle and can tops, tubes, and similar items. For more information write: Count-O-Matic, Inc., Div. of U.S. Engineering Co., Dept. PE, 40-24 22nd St., Long Island City 1, N.Y., or *circle number on card.*

175—Engineering Abstracts

The "Engineering Index Bound Volume for 1960" is now available. This catalog contains annotations on more than 34,000 articles covering 249 "field of interest" divisions in engineering. Each issue of over 1800 engineering and technical publications is reviewed. To obtain this current catalog write: The Engineering Index, Dept. PE, 29 W. 39th St., New York 18, N.Y., or *circle number on card.*

176—Filling Machines

An 8-page brochure (AC-60 Revised) describes the complete line of Colton and Colton-Hope filling machines for all types of liquids, creams, pastes, paints, chemicals, and food products. A table is presented as an aid in the selection of the proper machine for specified materials and filling rates. For a

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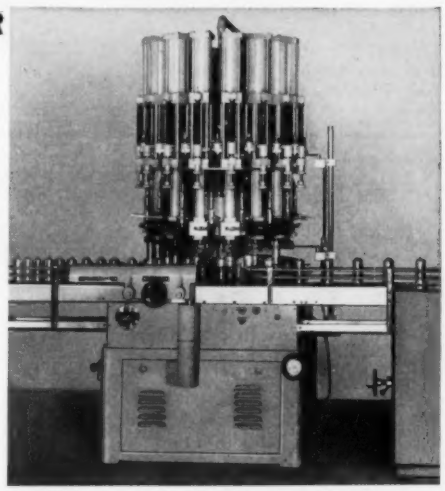

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copy of this brochure write: Arthur Colton Co., Dept. PE, 3400 E. Lafayette Ave., Detroit 7, Mich., or *circle number on card.*

177—Paperboard Partitions

Detailed information and samples are available on pre-assembled paperboard partitions for protective interior packaging. The various types are custom made to user specifications. For such information write: Peter Partition Corp., Dept. PE, 124 Boerum Pl., Brooklyn 1, N.Y., or *circle number on card.*

178—Label Papers

A portfolio covers the new line of Strip Tac pressure-sensitive label papers. Contents include general information and a data sheet, price sheets, and split plan. Sample sheets of different paper stock are also included and each sheet is perforated for tearing into smaller test strips. For more information write: The Brown-Bridge Mills, Inc., Dept. PE, Troy, Ohio, or *circle number on card.*

(End)

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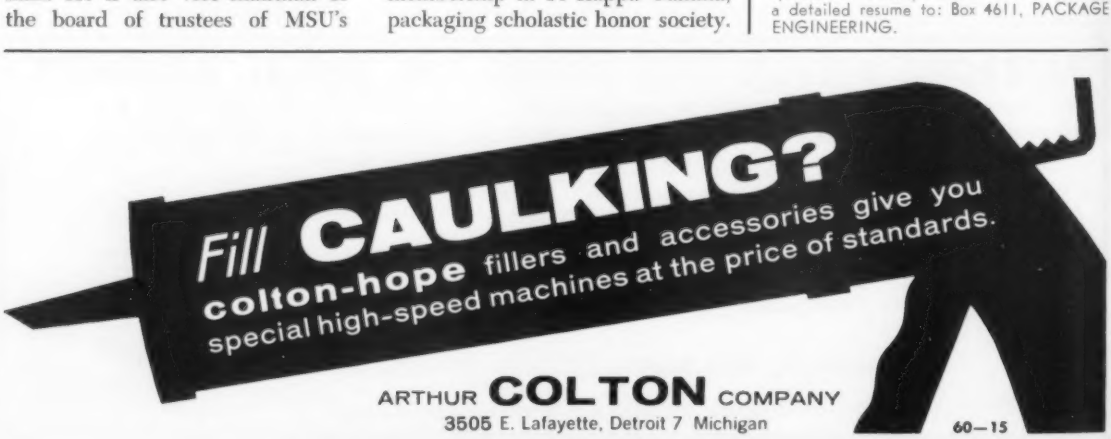
Michigan State honors Package Engineering editor

Michigan State University's Packaging Society presented its "packaging-man-of-the-year" award for outstanding contributions to packaging education to R. Bruce Holmgren, editor of PACKAGE ENGINEERING.

Mr. Holmgren has been a member of MSU's packaging industry advisory committee since its inception in 1953 and is currently chairman. He is also vice-chairman of the board of trustees of MSU's Packaging Foundation, a nonprofit corporation formed to develop financial support for the school of packaging, and to carry on other activities to further packaging education.

Mr. Holmgren received the award at the Packaging Society's annual dinner for graduating seniors, in East Lansing, February 25. He also received an honorary membership in Pi Kappa Gamma, packaging scholastic honor society.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What we think

Big need today: help people develop all their skills

As package users and suppliers alike keenly anticipate another brilliant and spectacular packaging show, the very vastness of the setting mars the view of a basic problem: regardless of the effectiveness of packaging materials and equipment, somebody somewhere has to make them *work*.

After the last weary exhibitor has pulled the plug on his display, and after the last shopping-bag-carrying visitor has trudged off to the parking lot or depot, we somehow regain our perspective of the problem. Not one of the packaging achievements unveiled at the show can reach fruition without trained minds, alert eyes and ears, and skilled hands to guide the process.

Widespread unemployment no bar to skill shortages

It is ironic that while thousands of people walk the streets hopefully looking for work, there are untold managers and supervisors of packaging operations looking just as hopefully for trained help. While the prophets of gloom and doom continue to plague us with their perennial pessimism, and while opponents of automation lurking about many a factory keep on "viewing with alarm," it becomes ever more important to keep the whole business in balance.

If we don't develop continuing reserves of trained manpower, and if we fail to meet the day-to-day needs of our packaging operations, the economy will be a lot worse off than it is now. In spite of the urgency attached to bringing about high-level distribution of manufactured products all over the globe, it still remains vital to have peak operating efficiency on packaging lines. And increasing line mechanization demands more skills of line personnel.

Actually there is nothing new in all this. Advances in technology have always forced people to learn new skills, and it is reasonable to assume that the fellow who was good at making Indian drags considered himself a victim of technological unemployment when someone showed up with something on wheels. Later, the drivers of horse-drawn streetcars faced similar problems.

It happens that all this is transpiring at a time when management is aware as never before of its ethical mandate, of its obligation to its human resources. The old yardstick of a company's only obligation being to the stockholders is no longer adequate. Besides considering itself having a public interest (which varies from company to company), it now takes a closer look at its obligations to help its own people grow and develop.

"So what?" ask the practical folks who manage the packaging lines. "How can you talk of making the most of skills and of upgrading people when you haven't got the people to upgrade?"

This emphasizes a major problem everywhere—finding packaging line mechanics, machinery adjusters, and set-up men. What we really need is a new source of such people. A company need not limit to its present employees its desire to help people make the most of their capabilities.

Elsewhere in this issue, George Flood, Grove Laboratories' able director of manufacturing, offers a challenging solution to the problem of where to find that scarcest of all commodities—a competent set-up man: find him among the "hot rods."

Put "hot rod" talent to work in your plant

Mr. Flood's experience in taking such young men of skill and enthusiasm and transferring their abilities from a back-alley garage to a place of responsibility on a packaging line strikes us as notable. The desire to meet high standards of mechanical perfection and the skill and care it takes to do all this are inherent in many a capable young hot rodder.

Seek them out and bring them into your plant where they can find intriguing challenges of mechanization surpassing their fondest hopes. Doing this offers mutual benefits: a happy circumstance is that a management farsighted along these lines gets (1) a reservoir of skilled manpower, and (2) the satisfaction of helping boys (who might otherwise go unnoticed) develop their latent talents to the fullest.

Bruce Hollingren

Editor

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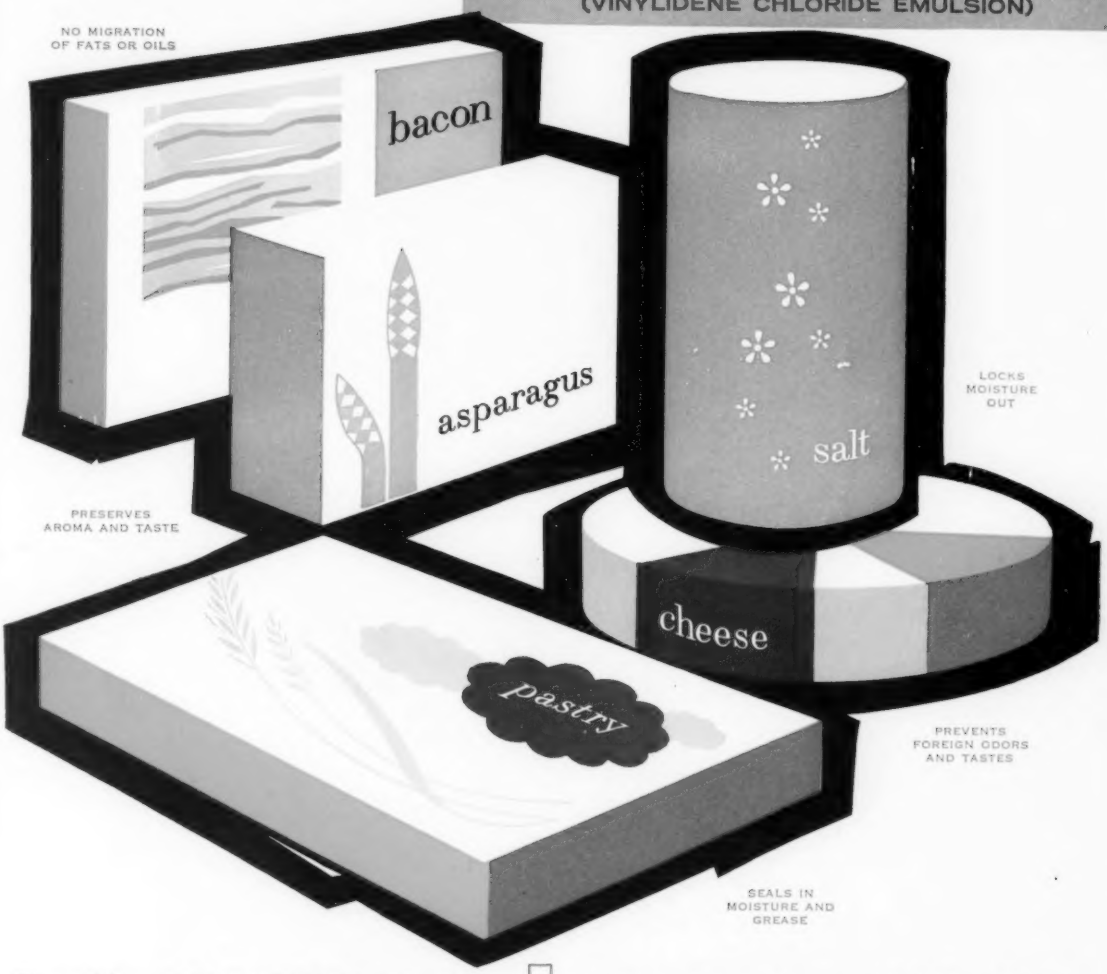

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